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Philip Unitt

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SAN DIEGO COUNTY

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Philip Unitt

MEMOIR 13



San Diego Society of Natural History

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To Alice Fries

*whose selfless devotion to wildlife conservation
is a model for everyone.*

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From original watercolors by Allan Brooks

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Foreword

San Diego County's varied habitats stretching from the open waters of the Pacific through the coastal range of mountains to the western portions of the Colorado Desert support a most impressive variety of birdlife. With the inclusion of casual and accidental stragglers, the County now boasts the largest list of species not only for all the counties in California, but also for all the counties in North America. In 1919, Frank Stephens compiled the first bird list of San Diego, a briefly annotated checklist of 303 species. Forty years later James R. Sams and Ken Stott produced another annotated checklist of 352 species, and today, only twenty-five years later, that list has increased by more than one hundred species.

Philip Unitt, a native San Diegan with a life-long interest in birds, gives us by far the most detailed account of San Diego County's avifauna, with an in-depth discussion of each species known from the County. The quantitative terms, so frequently left to the reader's interpretation by so many of today's authors, are numerically defined, and all other terms and abbreviations in the text are fully explained. Introductory sections on the ornithological exploration of the County, and the County's diverse vegetation, provide informative background material for the species accounts. The taxonomy and nomenclature used by Unitt are essentially those proposed by the American Ornithologists' Union, but those taxonomic issues still being debated are brought to the reader's attention to illustrate the complexity and dynamism of avian taxonomy.

The individual species accounts are far more detailed than anything previously available for similar sized areas of California. Current and historical status, distribution and habitat preference for each species are clearly defined, and much attention is devoted to discussion of subspecies. Literature citations or the observers' names are given for all specific records listed, as well as notations of those records supported by specimens and where those specimens reside. Arrival and departure dates are given for both summer and winter visitors, and the span of dates in both spring and fall are given for migrants. In addition, when available the dates that egg sets have been taken are included, providing clearer definition of local nesting seasons.

The discussions of subspecies are lengthy and provocative. Characters used to identify regularly occurring forms are given, and the characters used to separate forms occurring less frequently, as well as those to be expected, are well described, and should encourage readers to be more critical when observing birds in the field. Unitt's care and concern in pointing out conservation problems and encouraging readers both to be aware of status changes resulting from man's activity and to investigate unexplored problems is commendable and adds to the significance of this work. *The Birds of San Diego County* will

stand as the authoritative work on the County's birdlife for many years. But it also has much to offer anyone interested in the status and distribution of birds throughout the southwestern United States and northwestern Mexico.

Guy McCaskie
San Diego, California

June 15, 1984

Acknowledgments

This book had its beginning in 1978 when Michael U. Evans brought together a group of people interested in San Diego County birds, and proposed that the group cooperate to write a new review of county bird distribution. As the project evolved, I became the sole author, but many of the original group helped greatly with the research and preparation of the book. The many people who generously contributed information are acknowledged in the section "Sources of Information" (pages 4 and 5). I want to again thank the people who helped with the literature and specimen research: Elizabeth Copper, Michael U. Evans, Guy McCaskie, Thomas Oberbauer, and John P. Rieger. Guy I thank especially for being so generous with information and advice. I regret that other commitments and interests demanded so much of his time that he could not be a co-author or review the manuscript completely, as originally planned. Elizabeth's constant moral support was a great help to me. Mike offered a great deal of invaluable assistance at all stages of the project: fund-raising, taking the habitat photographs, proofreading my handwritten manuscript, and taking care of the production of the typed manuscript by the word processing service. Marie Cox executed the maps of San Diego County vegetation, topography, and localities, and gave me advice on the preparation of the species distribution maps. Kem Hainebach helped proofread the text and bibliography, and was my sparring partner in arguments over proper grammar and word usage.

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Philip Unitt
San Diego, California
June 15, 1984

INTRODUCTION

*SAN DIEGO COUNTY
GEOGRAPHY AND VEGETATION*

SPECIES ACCOUNTS

INTRODUCTION

Birds are sensitive indicators of environmental changes, and information about birds is important in evaluating the biological resources of an area. The great increase in the human population of San Diego County and the accompanying rapid conversion of natural habitats to urban and agricultural uses have wrought many changes in the county's bird fauna. Many of these changes have occurred since the publication of the last work dealing specifically with the birds of San Diego County (Sams and Stott 1959). Also, much additional information has been gathered during the last 25 years, and the distribution and status of many species is much better understood.

This monograph summarizes and updates information on all bird species known from San Diego County. The species accounts begin with a brief statement indicating abundance and seasonal status. They discuss habitat requirements and preferences, numerical status or population size, spatial distribution within the county, schedule of migration, timing of the breeding season, changes in status through history, and subspecies or problems of intraspecific geographical variation. Of course, each species presents unique problems, which demand a flexible approach, so I have not followed a rigid format. In general, I have allotted the most space to those species breeding in San Diego County for which there are significant problems of conservation, or in understanding distribution or migration. Rare vagrants are summarized briefly.

I have had two themes in mind while writing the species accounts. The first is to call attention to the problems of bird conservation and changes in status caused by man's influence on the environment. Many species which nest in San Diego County have declined greatly in abundance during this century. Birds requiring one of the following three habitats have been affected especially adversely: the coastal strand and salt-water marshes, coastal sage scrub, and lowland riparian woodland. Human use of the coastal region has been intense, with the result that most of the natural habitats there have been degraded or destroyed. Preservation of remnant populations of the many interesting and valuable birds (as well as other native animals and plants) of this area demands quick attention and responsible planning by governmental agencies and the general public. Birds of the coastal strand and marshes which have suffered particularly are Light-footed Clapper Rail, Black Rail (now extirpated), Snowy Plover, California Least Tern, and Belding's Savannah Sparrow. In the coastal sage scrub, populations of Cactus Wren and California (Black-tailed)

Gnatcatcher have declined seriously, and those of Greater Roadrunner and Rufous-crowned Sparrow have been reduced as well. In riparian woodland, Bell's Vireo, Yellow Warbler, and Yellow-breasted Chat have become uncommon and localized. Willow Flycatcher has been reduced to a handful of birds, and Yellow-billed Cuckoo, Warbling Vireo and Blue-gray Gnatcatcher have been eliminated completely as breeding species from the lowland. The riparian woodland birds suffer from an especially serious situation. Not only is their habitat often destroyed during stream channelization or urban development, but they are frequent victims of brood-parasitism by Brown-headed Cowbirds. Some undetermined environmental change has allowed cowbirds to become abundant in the coastal lowland, where they were originally absent. Their hosts have had little chance in the last 70 years to evolve effective defenses. Breeding populations of several other species, such as Turkey Vulture and Northern Harrier have declined for various reasons, and California Condor and Peregrine Falcon no longer nest here at all.

Some species have become more numerous, however, especially those which exploit residential and agricultural habitats. Outstanding among these are Killdeer, Mourning Dove, Anna's Hummingbird, Northern Mockingbird, American Robin, Hooded Oriole, and Brewer's Blackbird. Parks and residential areas offer good wintering habitat to some species such as Costa's Hummingbird and Western Tanager, allowing them to change their migratory habits and winter distribution. Construction of the salt works at the south end of San Diego Bay permitted the Black Skimmer and several species of terns to colonize a new locality and expand their breeding ranges. Obviously, bird distribution is a dynamic affair which must be studied continuously if we are to have any appreciation of man's influence on the natural world.

The avifauna of San Diego County is well known compared to many areas of the world. Only occasional rare vagrants remain to be added to the county list. Yet a wealth of fascinating problems awaits investigation. The habitat needs of almost all species are still understood only in a general way. Detailed studies of a bird's ecology, using quantitative techniques, are necessary before effective and efficient conservation measures can be taken. Some sections of the county are far less well explored than others. The foothill zone in particular needs attention, as dramatized by the rediscovery of Gray Vireo in 1977. The Anza-Borrego Desert, while fairly well known in spring, is practically terra

incognita in summer and fall. More study is needed of the timing of migration of quite a few species, especially of those in which breeding, wintering, or transient populations augment or replace each other at various seasons. Present information on nesting seasons is inadequate, since it is based largely on egg collections made from 1890 to 1940. New data are needed since several species have apparently extended their breeding season in recent years. Studies which involve repeated surveys of a locality throughout the year are important for answering questions about bird distribution and migration. Accurate and detailed field notes are a prerequisite for making a contribution to ornithology (see Remsen [1977] for suggestions on this topic).

Subspecific identifications are particularly interesting and useful, since they allow one to associate a bird with a definite region of origin. Often, populations of species nesting in San Diego County are of a different subspecies from those which nest farther north and visit the county in migration or winter. Populations nesting in various regions often migrate in different directions at different times of the year. Collected specimens, identified to subspecies, are vital for an understanding of the marvelous complexities of bird distribution (see Phillips [1974 and 1975] for further discussion of this topic). A person with a shotgun, mist net, and banding and collecting permits can investigate many unexplored problems. Subspecies of birds can usually be identified only from specimens in the hand, after measurement or comparison with previously identified specimens. Of course, any bird collected or found dead in San Diego County should be donated to the San Diego Natural History Museum where it can be preserved as a study skin or skeleton, a permanent scientific document for future study. A note with the exact date and locality of collection must accompany the specimen if it is to have any value. The bird's gonad size, fat condition, extent of molt and degree of skull pneumatization should be recorded by the specimen preparer, since these offer indispensable information about the bird's age, breeding condition, and migratory status. So many old specimens are of little value since early collectors seldom noted these features.

The preceding discussion leads to my second theme. This is to encourage observers to investigate unexplored problems and to make new discoveries. I want this publication to be useful to someone who needs to know where and when to find a particular species, but my basic purpose is to point out what aspects of bird distribution are yet unknown. Ornithology is one science where amateurs can make an immense and worthwhile contribution. Many of the topics mentioned above will probably never be studied unless amateurs take a scientific interest in their local environment. Once an observer completes a study or makes a discovery, it must be communicated to the rest of the ornithological community. Significant observations should always be reported to the regional editor for the Southern Pacific Coast region for inclusion in the quarterly summaries

published in *American Birds*. However, one's contribution must compete for space there with reports from all over southern California, and these quarterly synopses are inadequate for publishing the results of any in-depth study. The Breeding Bird Censuses and Winter Bird-Population Studies published in the January issue of *American Birds* are a fine method of gathering and transmitting information about local bird distribution, but few have yet been done in San Diego County. Ideally, field ornithologists should design studies to investigate specific questions, then publish their results in scientific journals. *Western Birds* is appropriate for communicating research in southern California. For studies of general interest, one might consider publishing in *California Fish and Game*, *American Birds*, or one of the "professional" journals: *Condor*, *Auk*, or *Wilson Bulletin*. The common practice of printing research only as "in-house" reports of government agencies or environmental consulting firms is unsatisfactory. Such reports are not easily accessible to the general public, are difficult to locate, and may never be incorporated into the permanent scientific record. Only by a free exchange of data and ideas can ornithology advance as a science.

Terms, Abbreviations and Symbols

I have tried to make the species accounts as readable as possible by using a minimum of abbreviations and shorthand terminology. Nevertheless, the demands of brevity and simplicity make some inevitable.

The species accounts begin with a generally accepted English name, followed by a scientific name adopted by a recent authority on the classification of the family of which the species is a member (see section on taxonomy and nomenclature). In several cases, there are legitimate disagreements among ornithologists as to whether certain forms should be ranked as species or subspecies. I have indicated these cases by placing the name of the form using the broader interpretation in parentheses immediately following the generic name. The specific name under the narrower interpretation is third, without parentheses. An example is MacGillivray's Warbler, *Geothlypis (philadelphia) tolmiei*. The narrow contact zone between MacGillivray's and Mourning Warblers in Alberta has not been studied thoroughly enough to indicate whether or not reproductive isolating mechanisms have developed between the two forms. Therefore, the older name which would apply to the expanded species is placed first, followed by the name which applies to the restricted species.

Monotypic species (species which are not divided into subspecies) are listed binomially. Polytropic species are listed trinomially if only one subspecies is known to occur in San Diego County. If more than one subspecies occurs in the county, "subsp." follows the species name, and the subspecies are discussed at the end of the account. Most subspecies can be identified only through comparison of collected specimens. If the species has never been collected

in the county, and there is a possibility that more than one subspecies might occur, "subsp.?" follows the species name. If the species has never been collected here, but the subspecies can be reasonably assumed by geographic range or identified by sight, the subspecies is mentioned at the end of the account. The words "subspecies" and "race" are used synonymously.

The abundance of birds is difficult to describe meaningfully. I have confronted this difficulty by using both general designations and specific examples of numbers observed at certain dates and localities. The general designations used here are modeled on those used by Bull (1974), who defined his categories by the number of individuals seen per day per locality. I would further define them to mean the average number of individuals seen and heard in a day by an experienced observer thoroughly searching an area on foot.

Abundant: over 200 per day

Very common: 50 to 200 per day

Common: 20 to 50 per day

Fairly common: 7 to 20 per day

Uncommon: 1 to 6 per day

Rare: found on average less than once per day, even in the suitable season, but occurs in San Diego County every year.

Very rare: occurs in the county on average less than once per year, but there are seven or more county records.

Casual: three to six county records

Accidental: one or two county records

Of course, the numbers of birds in an area often vary considerably, so this is indicated by expressions such as "common to very common." The numbers of some species fluctuate greatly from year to year; this is indicated by expressions such as "irregularly rare to fairly common."

Most birds migrate, so their status in a given area is different at different times of the year. In North America most species breed during the spring and summer, migrate during the fall to some other area farther south, remain there for the winter, then return north in spring. This leads to four basic categories: summer resident, fall migrant, winter visitor, and spring migrant. "Resident" identifies the bird with its breeding range, "visitor" with its non-breeding range. I have used these categories according to the bird's point of view, not the human definitions of the seasons. For some species, "fall migration" is underway in late June, for others, "spring migration" begins in mid-January. Many birds have different migratory patterns. For example, some nest south of San Diego County, migrate north to visit San Diego in late summer or fall, then return south by winter. Others migrate north to breed, but substantial numbers of non-breeders remain here through the summer. Terms such as "summer visitor" are used for these cases. Other more complex situations must be described individually.

The migrations of many birds follow well defined schedules determined by changes in day length. As a result many species begin arriving, depart, or reach maximum or

minimum abundance around the same time each year. Weather conditions may intervene to speed or slow migrations, so there is usually some variability from year to year. Expressing the timing of these events to an accuracy of within ten days is normally adequate. For this purpose I have referred to the timing of events as being "early" (1st to 10th), "mid" (11th to 20th), or "late" (21st to end) in the month.

Since the status of every species varies from place to place within the county, it is useful to define smaller regions within the county which correspond to patterns of bird distribution. Some of these are discussed further in the section on county geography, but it is appropriate to list them here.

Coastal lowland zone (or simply "lowland"): region from coastline east to 460 m (1500 foot) elevation contour.

Foothill zone: region from 460 m contour east to 1220 m (4000 foot) contour, or to edge of eastern slope.

Mountain or montane zone: regions above 1220 m elevation.

Desert-edge zone: eastern slope of mountains between 1220 m and 760 m (2500 foot) elevation.

Anza-Borrego Desert: eastern region of the county below 760 m elevation.

Coastal slope: entire region of the county draining west into the Pacific Ocean.

Eastern or desert slope: entire region of the county draining into the Anza-Borrego Desert.

San Diego Area: region of metropolitan San Diego, extending from the Mexican border north to Torrey Pines State Reserve, Miramar, and Lakeside.

North County: region of the coastal lowland extending from Del Mar and Lake Hodges north to the Orange and Riverside County lines.

Books and journals are cited as literature sources in the usual manner, by author and year. However, I have referred so frequently to the quarterly regional reports for the Southern Pacific Coast region in *Audubon Field Notes* and *American Birds* that these are cited individually in the text. "AFN" indicates *Audubon Field Notes*, and "AB" its successor, *American Birds*. Museum specimens are cited by an abbreviation of the museum name and the specimen's catalogue number. The museums so abbreviated are: AMNH: American Museum of Natural History, New York
AMR: Amadeo M. Rea, personal collection
CAS: California Academy of Sciences, San Francisco
CSULB: California State University, Long Beach
LACM: Los Angeles County Museum
MVZ: Museum of Vertebrate Zoology, Berkeley
SBCM: San Bernardino County Museum
SBMNH: Santa Barbara Museum of Natural History
SD: San Diego Natural History Museum
SDSU: San Diego State University
US: United States National Museum, Washington
WF: Western Foundation for Vertebrate Zoology, Los Angeles.

References to the unpublished notes of individual observers are made simply by name. Two useful sources of unpublished information are cited with abbreviations. The file of observations in Anza-Borrego Desert State Park, stored at the Park Headquarters, is abbreviated "ABDSP file." The monthly surveys conducted at San Elijo Lagoon since November 1973 are cited with "SEL surv." In many cases, two or more records from the same source are cited in sequence. To save space and improve readability, the source for the entire sequence is cited at its end.

The duration of a species' breeding season is indicated with a notation such as "Egg dates (10): 15 April–20 May." The first number is the sample size: the number of egg sets from San Diego County preserved in WF and SBCM. The range of dates is from the earliest to the latest when these eggs were collected.

The species distribution maps portray the distribution of most locally breeding species during their nesting season. Each plot point represents a locality where the species has actually been found nesting, or in suitable habitat at the time of year when it should be nesting. Published records of definite nesting activity (copulation, nest-building, eggs, chicks) are indicated by triangles pointing upward. Unpublished records (specimens or sight records) of the same are indicated by squares. Triangles pointing downward indicate published records of occurrence in proper habitat during the nesting season, but without definite indication of breeding. Circles indicate such occurrences whose source is unpublished. The distributions of many species have been reduced substantially since the period of active egg-collecting, when much of our information on breeding birds was gathered. To show these changes, I have used an "x" to indicate localities where a species definitely nested in the past but does not at present, and a plus sign for localities where it occurred in the past during the breeding season (but no positive nesting evidence recorded), but not presently. The distinction is not always easy to make, since some localities visited by early egg-collectors have not been studied in recent years. In such cases I had to evaluate whether the species' decline in San Diego County as a whole was serious enough to call attention to it by using the symbols for former occurrence.

Sources of Information

Study of a regional avifauna requires that data be gathered from a great variety of sources, and be evaluated critically. I have tried to be as thorough as was possible within the constraints of my limited resources, and believe that I have missed little information of significance. I was unable to collect exhaustively all the data available on birds in San Diego County, since I could visit few museums outside of San Diego, and could not speak to every field observer or collector who has worked in the county. I hope this summary will help students of San Diego ornithology under-

stand how their data may add to knowledge of bird distribution, and will motivate them to publish their results in accessible journals.

One fundamental source of information is published scientific literature. From 1899 to about 1965 most original information on southern California ornithology was published in the *Condor*. Several notes of significance to San Diego County appeared in the *Auk* and the *Oologist*, and a few in other journals. Seven comprehensive summaries have been published which discuss the status of all the bird species of the county or a larger area including the county. Most of the summaries also include considerable original data. In chronological order, they are Belding (1890 – land birds only), Willett (1912), Stephens (1919a), Willett (1933), Grinnell and Miller (1944), Sams and Stott (1959), and Garrett and Dunn (1981).

During the past 20 years, fewer publications on local bird distribution have appeared in *Condor* and *Auk*. Beginning in 1970, *California Birds* (since 1973 called *Western Birds*) partly filled this gap. An immense amount of information from San Diego County has been published since 1947 in the quarterly regional reports for the Southern Pacific Coast region in *American Birds* and its predecessor, *Audubon Field Notes*. Guy McCaskie, the author of these reports since 1963, has transferred all the data in them for San Diego County by species onto index cards, which he generously made available to me.

Also in *American Birds* are the results of the annual Christmas Bird Counts, a valuable source of information on winter bird distribution. Christmas Counts involve the participation of a large number of observers who divide a pre-established circle of 15 miles diameter to count the numbers and species of birds on one day in late December or early January. These counts have been conducted in the San Diego area every year since 1922, except 1944, 1948, and 1952. Since 1966 the center of the count circle has been located at the mouth of the Sweetwater River in San Diego Bay. Another count circle is located on the coast of northern San Diego County, with its center three miles southwest of Vista. Unfortunately, this count was uncritically compiled prior to 1975, so I have chosen to ignore everything published in it prior to that year. As compiler of both the San Diego and Oceanside counts from 1975 to 1981, I have retained all the raw data from these counts, and referred to them extensively. New counts were inaugurated in 1980 in the Rancho Santa Fe and Lake Henshaw areas.

A substantial amount of information, particularly dealing with threatened and endangered species, appears in reports of the California Department of Fish and Game. I have examined all such reports, still available to the public, which related to San Diego County.

Another indispensable resource is the ornithological collection of the San Diego Natural History Museum. Several thousand study skins and skeletons from San Diego

County are preserved in this museum, and I examined the data attached to all of them for this study. The museum also maintains a file of bird photographs, and all photograph-documented records cited in the species accounts refer to slides or prints in this file. Other museums also contain many important specimens from San Diego County. The San Bernardino County Museum has a relatively small representation of both study skins and eggs from San Diego, but these include several specimens of significance, including unique specimens of Flesh-footed Shearwater, Little Blue Heron, Guadalupe Xantus' Murrelet, and *zaboria* Fox Sparrow. Most of these were collected in recent years by Eugene A. Cardiff. The Museum of Vertebrate Zoology of the University of California at Berkeley has many skins from San Diego County. Some of these were taken in 1861 and 1862 by James G. Cooper, the earliest collector to spend any appreciable time in San Diego, while many of the others were taken in the inland regions of the county by Frank Stephens in 1908. Unfortunately, I had time to examine specimens of only about fifty selected species in this museum. The personal collection of Amadeo M. Rea, at the San Diego Natural History Museum, has important specimens collected at San Luis Rey from 1961 to 1963. Another collection I used extensively is the egg collection in the Western Foundation of Vertebrate Zoology at Los Angeles. Thousands of egg sets from San Diego County have been gathered into this museum. Knowledge of the breeding distribution and nesting season of most species is based primarily on the data in this collection. Michael U. Evans, John P. Rieger, and Thomas Oberbauer made several visits to the Western Foundation to record these data, an invaluable contribution to this book.

Another immense source of information is unpublished observations from the field notes of many local amateur ornithologists. Guy McCaskie's notes from 1962 to the present record the results of untold thousands of hours spent searching for birds in San Diego County. They are vital for understanding the occurrence of the uncommon or rare species, and the migration schedules of almost all migratory species. Elizabeth Copper generously spent weeks poring through McCaskie's notes and recording the most significant observations onto index cards by species. Jon Dunn gave me access to his notes, which record many observations in San Diego County from 1970 to 1978. Eleanor Beemer contributed much valuable information based on her observations at Pauma Valley and Palomar Mountain dating back to the 1930s. Alice Fries contributed a large volume of data as well, involving primarily northern San Diego County. She also gave me a copy of the results of the monthly bird survey at San Elijo Lagoon from November 1973 to July 1975, compiled by Allen B. Altman, a source which I have referred to frequently. Kenneth L. Weaver offered a great amount of valuable information based on his careful observations of birds in the Escondido area, and

patiently answered many questions. Many other persons supplied information or answered specific questions about particular localities or species, based on their own observations: Elizabeth Copper (Least Tern), Bart Cord (San Diego County generally, montane species particularly), Craig Culver (birds of prey, especially Prairie Falcon and Cooper's Hawk), Claude G. Edwards, Jr. (San Diego County generally, Point Loma particularly), Michael U. Evans (terns, Black-tailed Gnatcatcher, Gray Vireo), William T. Everett (Turkey Vulture), Rosemary Ford (Flying K Sanctuary), Sharon Goldwasser (riparian woodland species), Diana Herron (San Diego County generally, Balboa Park particularly), Mark Jorgensen (Anza-Borrego Desert), Paul Jorgensen (rails), Mary Kelley (Great Blue and Black-crowned Night Herons), Steve Montgomery (Black-tailed Gnatcatcher and other coastal sage scrub species), Arthur G. Morley (Anza-Borrego Desert), David W. Povey (pelagic species), Don Ramsey (Old Mission Dam area), Amadeo M. Rea (San Luis Rey), John P. and Mary Platter Rieger (herons and ibises), Martha Rosenquist (Black-crowned Night Heron), Larry R. Salata (Willow Flycatcher and Bell's Vireo), Thomas Scott (birds of prey, especially Golden Eagle), Margaret Thornburgh (San Diego County generally), Eric Thowless (Great Blue Heron), Wardene Weisser (Great Blue Heron), Harold A. Wier (Turkey Vulture, Grasshopper Sparrow), and Richard L. Zembal (Clapper Rail). I have cited sight records by many other observers too: Allen B. Altman, Robbie Bacon, Mona Baumgartel, Louis Bevier, Laurence C. Binford, John Bishop, Suzanne I. Bond, Morris Burns, John Butler, Kurt Campbell, Eugene A. Cardiff, Michael Carmody, Chris Carpenter, Robert Copper, Brian Daniels, John DeBeer, Linda S. Delaney, Fred S. Dexter, Richard A. Erickson, Kimball Garrett, Virginia Gilmore, Andreas Helbig, Roger Higson, Paul E. Lehman, William G. Lehmann, William Lenarz, Gary Lester, Clifford Lyons, Ian MacGregor, Ralph Mattson, Esther Jane McNeil, Betty-Loue Morin, Eric Nelson, Steve Oberbauer, Jerry Oldenettel, Dennis Parker, Robert L. Pitman, J. Van Remsen, Bill Rodstrom, Phil Roulland, Laurence Sansone, Brad Schram, Fred Schaffner, Virginia Shaw, Buz Shear, Jay Sheppard, Richard C. Smith, Curtis Stuteville, Pete Suffredini, Scott Terrill, Dick Thompson, Richard E. Webster, Cora Wilson, Susan Wise, and James Wolstencroft. To all these people I express my deep appreciation, for this work would not have been possible without their cooperation. Finally, I have referred extensively to my own field notes from 1970 to 1981, especially for some of the more common species that have received relatively little attention from ornithologists. The main body of the text was completed by 31 December 1981, and no new information was added to it after this date. During the two years of proofreading, editing, and waiting for printing to be arranged, many interesting discoveries were made. A few of these, including all species and subspecies new to the county, are mentioned in the addendum.

Historical Overview of San Diego Ornithology

An understanding of the ornithological exploration of an area is useful for interpreting the information already available about the area's birds, and appreciating the problems that still need investigation. The earliest naturalists who visited San Diego and collected birds were Archibald Menzies with a British expedition in 1793 and Paolo Emilio Botta with a French expedition in 1827 and 1828. They discovered a few new species, such as the California Condor, California Quail, Greater Roadrunner, Anna's and Allen's Hummingbirds. Unfortunately, Menzies and Botta did not record their specimen localities more precisely than "California," and did not publish their own accounts of their explorations, so it remains unknown just what birds they found at San Diego. The first ornithologist to do any significant work in San Diego County was A. L. Heermann, a doctor in the United States army. Heermann visited San Diego during the early 1850s, and reported some of his observations and specimens in the *Journal of the Academy of Sciences of Philadelphia* (1853), including seven species definitely from San Diego. He collected the first specimens of Heermann's Gull and Large-billed Savannah Sparrow at San Diego, which Cassin (1852) described as new species. Heermann (1859) reported considerable new information in the "Pacific Railroad Reports," including specimens of 47 species collected both by himself and others during the mid-1850s. J. G. Cooper (1830–1902), another army doctor and frontier naturalist, also came west with the railroad survey in 1853. He spent quite a bit of time in San Diego County during his stay in southern California from December 1860 to April 1862. Many of the specimens he collected are still in the Museum of Vertebrate Zoology at the University of California at Berkeley. He included information from San Diego County in papers published in 1868, 1870, 1874, and 1880, and reported the first data on migration and nesting information from San Diego County.

As immigrants from other regions of the United States moved in during the 1870s and 1880s, San Diego grew from an insignificant Mexican village into an American small town, and San Diego County changed from a land of vast cattle and sheep ranches to a land of orchards, vineyards, and grain fields. A few of the settlers brought with them an interest in birds. Frank Stephens, Lyman Belding, W. Otto Emerson, F. E. Blaisdell, and N. S. Goss were the principal ornithologists active in San Diego during this period. Some of their findings were published as separate notes, but many of them were brought together and summarized by Belding (1890) in his "Land Birds of the Pacific District." This is the first publication that gives any sort of picture of the distribution of birds within the county, since the sources were reporting from widely scattered localities: San Diego, Poway, Campo, Santa Ysabel, and Julian. A second volume treating the water birds was never published, but

Joseph Grinnell referred to Belding's manuscript in his distributional list of California birds in 1915, and in his "Game Birds of California" written with H. C. Bryant and T. I. Storer in 1918.

Frank Stephens (1849–1937) was a self-taught ornithologist and pioneer naturalist. He drifted westward from his native New York and arrived at Campo, San Diego County, in 1876. By then Stephens was already an active collector; he promptly discovered Gray Vireos, not previously known from California. He left San Diego County in autumn 1877 to live and collect elsewhere in southern California and Arizona, but returned in 1887 and settled at Witch Creek near Santa Ysabel. In 1897 he made his permanent home at San Diego. In his later years Stephens collected mainly at his ranch which he established in 1910 at La Puerta (now Mason) Valley in the desert-edge zone. In 1924 he became the San Diego Natural History Museum's director and ornithologist, and his collection of study skins formed the nucleus of the museum's collection. In 1908 he collected in the mountain and foothill zones many specimens which were preserved in the Museum of Vertebrate Zoology. His 1919 annotated checklist of the birds of San Diego County was the first such attempt specific to this area.

A. W. Anthony (1865–1939) was the first local ornithologist interested in oceanic birds. He first arrived in San Diego in 1886, and collected many birds here, though he also spent much time on expeditions elsewhere in the western United States and Mexico. Unfortunately, his collection was sold to the Carnegie Museum at Pittsburgh, so I did not use it in research for this book. Laurence M. Huey, another self-taught ornithologist, succeeded Stephens as the museum's curator of birds. Huey was a native San Diegan who pursued his interest in birds from childhood. He was the anonymous "young friend" who guided Stephens (1909) to nests of Black Rails around San Diego Bay. Huey collected thousands of birds in the San Diego area which are preserved in the Natural History Museum. Other persons connected with the museum made substantial contributions as well. Clinton G. Abbott, as director of the museum, was at the center for reports of ornithological events such as the nesting of Dippers (1927a) or invasions of Wood Storks (1935). J. W. Sefton, Jr., president of the San Diego Society of Natural History, made special efforts to collect pelagic birds, and published many observations as separate notes.

The interval from 1890 to 1940 was a period of extensive egg collecting in San Diego County. While many people today deplore the exploitative and commercial aspects of egg collecting, the records of dates, localities, and habitats made by the collectors and preserved with their egg sets are undeniably a basic and vital contribution to knowledge of bird distribution. Some of the prominent egg collectors of this period are James B. and Joseph Dixon, A. M. Ingersoll, Clarence S. Sharp, Paul Field, and Nelson K. Carpenter. Many of the egg collectors were residents of

Escondido, so the central section of the coastal lowland was especially well studied. Sharp's (1907) "Breeding Birds of Escondido" is a fascinating glimpse into what San Diego County's avifauna was like at the turn of the century. The egg collectors did relatively little work in the foothill and mountain zones, and almost none in the Anza-Borrego Desert. They published only a few papers on their own, but fortunately most of their collections are preserved in the Western Foundation for Vertebrate Zoology. George Willett of the Los Angeles County Museum communicated with some of them and included their contributions in his summaries of coastal southern California bird distribution (1912 and 1933).

After World War II a new facet of field ornithology developed with extensive reliance for the first time on sight identifications, without collected specimens. Unfortunately, this resulted in a temporary increase in published misidentifications. However, the field guide approach did bring about greater public awareness of the natural environment and interest in wildlife conservation. The organization of the San Diego Audubon Society and first mass-involvement Christmas Bird Count were in 1953. The quarterly regional reports in *Audubon Field Notes* gradually supplanted separate published notes in *Condor* as a medium for disseminating information about bird distribution. The annotated checklist of San Diego County birds by J. R. Sams and K. Stott Jr. (1959) was a useful, though brief, summary.

R. Guy McCaskie (1936–), a civil engineer and tireless birdwatcher, turned San Diego ornithology in new directions. A native of Scotland, he immigrated to Tahoe City, California in 1957, and to San Diego in January 1962. McCaskie's special interest in rare migrants and vagrants resulted in his adding dozens of species to the county list, beginning with the Ruff in March 1962. By his intensive year-round field activity he gathered an immense amount of information on the schedules of bird migrations. His critical approach and great improvement of field identification techniques strengthened the trend toward reliance on sight identifications. Still, he documented many of his discoveries during the 1960s with collected specimens. McCaskie published some of his observations in notes in the *Condor* during the 1960s, and in *California Birds* or *Western Birds* during the 1970s. But he exercised his greatest influence as regional editor for the Southern Pacific Coast region in *Audubon Field Notes* (after 1970 *American Birds*), and established this journal as a primary medium of communication among birdwatchers. Rising public awareness of the natural environment combined with excitement generated by McCaskie's approach and discoveries caused many amateurs to follow his example, and several of these also contributed significantly to knowledge of San Diego distribution. Increased public involvement made possible projects such as monthly censuses at San Elijo Lagoon, Breeding Bird Surveys, and regular Western Field Ornithologists pelagic trips.

During the 1970s, public concern about wildlife conservation resulted in the passage of the Endangered Species Act. Government agencies such as the California Department of Fish and Game, the U. S. Fish and Wildlife Service, and the Federal Bureau of Land Management were then faced with the problem of determining the status of endangered or possibly endangered birds. Soon it became evident that knowledge of the distribution of breeding birds in San Diego County had advanced very little since the decline of egg-collecting. Certainly knowledge had not kept current with the changes brought about during a period of extensive human alteration of the natural environment. Wildlife agencies therefore sponsored surveys of the Least Tern by Elizabeth Copper and others, the Clapper Rail by Paul Jorgensen and R. L. Zembal, the Belding's Savannah Sparrow by Barbara Massey, and the Bell's Vireo by Sharon Goldwasser and L. R. Salata. A few other species received less intensive attention. Declining government interest and revenue threaten to end official support of wildlife investigation and conservation projects during the 1980s. As during most of San Diego history, the continuing task of advancing and updating information on wildlife will fall to amateurs with a dedication to nature and science.

Taxonomy and Nomenclature

Ornithological nomenclature serves two functions. First is to provide birds with standardized names to improve communication about birds among people. Second is to provide names which express evolutionary relationships among birds. Species of birds have at least two names, a common English name determined by popular usage, and a latinized scientific name determined according to the rules of the International Code of Zoological Nomenclature. In the United States, it is traditional for ornithologists and birdwatchers to rely on the check-list committee of the American Ornithologists Union as the authority for both English and scientific names. The committee's names are published in the A. O. U. Checklist of North American Birds (1957) and its supplements (1973 and 1976).

One of the fascinating pursuits of ornithology is the effort to unravel the history of bird evolution and the differentiation of the 9000 species which inhabit the earth. However much is yet known about bird relationships, science is still very far away from a complete understanding. Evaluation of the relationships among species or higher groups requires detailed study of anatomy and behavior and attention to apparently minor differences. Biochemical techniques should be able to provide information on the degree of genetic similarity among species, but these techniques are still in their infancy and many problems remain. In-depth, comparative studies of anatomy or behavior have been made of only a few groups. Evolution has taken many turns during millions of years of changing environments, so evidence for relationships derived from one source may seem inconsistent with evidence from another source. Ornithologists

often have legitimate differences of opinion as to which characteristics are more trustworthy guides to relationships. These kaleidoscopic views of evolution are a challenge to science but are a source of confusion in classification and nomenclature. When a discovery about bird relationships is made, the new knowledge must be incorporated into the system of classification. Sometimes this indicates that species should be shifted to different genera, genera to different families, or genera combined or broken up. Sometimes it is found that there are no reproductive isolating mechanisms between two supposed species so they must be combined into one, or that one species actually consists of two morphologically similar but reproductively distinct populations (sibling species). These discoveries then require a reordering of the sequence of species which is supposed to reflect relationships, a change in the scientific name, or both. Unfortunately this brings the second goal of ornithological nomenclature into conflict with the first.

The tradition of relying on the A. O. U. checklist as the authority on groupings and names carries the virtue of stability but the drawback of inflexibility in responding to advancing knowledge of bird evolution. In this work, I have sought a compromise in adhering closely to the A. O. U. on English names, where uniformity is most important. But in scientific names I have tried a more flexible approach, following many classifications published since 1957. In this I have been guided primarily by the more recent volumes of Peters' Checklist of Birds of the World (1931-1979), Mayr and Short (1970), Voous (1973 and 1977), and Monson and Phillips (1981). I realize this unorthodox approach may be disconcerting to some readers, but I hope to compensate for this by sparking increased interest in the wondrous complexities of bird evolution.

As mentioned in the introduction, subspecies of birds are a useful tool for learning about migration and evolution. In ornithology a subspecies may be defined as a population which is morphologically distinguishable, and has a breeding range geographically distinct, but is not reproductively isolated from other populations of the same species.

This definition implies several complexities however. If the breeding ranges of two populations are completely separated, it may be difficult to evaluate whether or not they are reproductively isolated. If their ranges are in contact, the two populations may hybridize to a limited extent, indicating reproductive isolating mechanisms that are only partially effective. Evolution and speciation are gradual processes, and one can find examples of every stage on the continuum from subspecies to species. Subspecies whose ranges are in contact often show broad zones of intergradation between them, and it may be an arbitrary decision as to where to draw the line between the two. Variation in some species may be so gradual that it is meaningless to divide them into subspecies. Some populations show significant average differences in certain morphological characters, but the range of variation and amount of overlap between the populations is so great that few individual specimens could be conclusively assigned to one or the other. Ornithologists generally accept that for a population to be distinguished as a subspecies and given a scientific name, at least 75 % of its members should be recognizably different from members of all other populations. Some subspecies have been named which are recognizable only when the birds are in their freshest plumage or are based on such slight differences that carefully selected comparison specimens are needed for identification. The variation involved in these situations may illustrate interesting facets of evolution, but I do not believe that it is useful to try to incorporate all of them into our limited system of trinomial nomenclature.

With all of these complexities, it is not surprising that ornithologists frequently disagree on the recognition, limits, and names of many subspecies. In this book, I have tried to mention different viewpoints wherever they relate to San Diego County. Differences from the A. O. U. Checklist (1957) are always discussed. With only the limited resources of the San Diego Natural History Museum, I was unable to investigate many problems of subspecific variation. The guidance of Dr. Amadeo M. Rea was invaluable in many complex situations.

SAN DIEGO COUNTY GEOGRAPHY AND VEGETATION

The influences of climate, topography, and soil type all combine to determine the character of the biological environment of any region. Each of these factors varies greatly through San Diego County, and an understanding of them is essential to understanding the county's bird fauna. Pryde (1976) has provided a good introduction to San Diego geography, and the brief overview offered here is based primarily on that book.

San Diego County may be divided into several regions useful for interpreting bird distribution, based on topography and vegetation communities. From west to east, the first region is the open waters of the Pacific Ocean. The upwelling and vertical mixing of these waters makes them rich in nutrients and oceanic organisms, so they are often exploited by immense numbers of pelagic birds. The distribution of birds over the ocean is strongly influenced by distance from shore. The continental shelf is only 3–16 km (2–10 miles) wide off San Diego County. Ocean birds are usually most abundant within 15 km of shore, and

several species seldom or never venture farther out. Other species, such as Black-footed Albatross, Leach's Storm-Petrel, and Xantus' Murrelet prefer to stay out of sight of land however, so there is a substantial difference between the composition of the avifauna eight or eighty kilometers offshore. The ocean floor off San Diego is a series of basins and ridges. The ridges induce vertical mixing of the water, bringing nutrients and organisms to the surface and attracting birds, while the waters over the basins are often quite devoid of birds. These ridges continue out past the Cortes and Tanner Banks, the western limit of the scope of this book, so that species that prefer the high seas, such as Laysan Albatross and *Pterodroma* spp., have not been found within the region discussed here.

The coastline is a vital resource to a great number of birds. In many places, the littoral habitat is only a narrow sandy beach or sandstone bluff. Only small numbers of a few species frequent bare sandy beaches, but the clumps of giant kelp (*Macrocystis pyrifera* and *M. angustifolia*) that



PHOTOGRAPH 1. Rocky ocean shoreline at Point Loma. Among the many birds that may be seen here are Brandt's and Pelagic Cormorants, Snowy Egret, Wandering Tattler, Spotted Sandpiper, Willet, Ruddy and Black Turnstones, Surf-bird, and rarely, Black Oystercatcher. Photograph by John P. Rieger.

often wash up afford good foraging habitat for many shorebirds. In some places, serious erosion of sand is reducing the beach to cobble. Around La Jolla and Point Loma, the shoreline is bare rock with scattered growths of marine algae. Several species of birds seek this habitat, particularly at low tide when small marine animals become trapped in tidepools. Artificial rock breakwaters are eventually colonized by sessile organisms and are visited by the same birds which frequent natural rocky shorelines.

The outstanding features of the littoral zone are the many coastal wetlands. These are the seventeen bays, estuaries, and lagoons of San Diego County. Each of these has its own unique features which results in a different combination of bird species frequenting each wetland. In addition, many of the lagoons become dry, then are flooded irregularly by high tides or winter rains. Such variety of environmental conditions often makes it difficult to understand the migration and distribution of many water birds. San Diego and Mission bays are fully open to the tides and offer large surfaces of water, a habitat sought by many ducks, loons, and grebes. Agua Hedionda Lagoon, kept permanently open and dredged, is similar to the bays but on a smaller scale. The Tijuana River estuary is permanently open to the tides, and is outstanding for its extensive salt marsh. It is of extreme importance because it, of all the county's wetlands, remains most nearly in its natural condition. Tidal mudflats are found in San Diego County only around San Diego and Mission bays, and at the San Diego and Tijuana river mouths. As a result species that prefer tidal mudflats, such as non-migrating Red Knots and Short-billed Dowitchers, are restricted to those localities. Most of the lagoons of northern San Diego County contain a mix of fresh- and salt-water habitats, and their salinity fluctuates greatly under different conditions. The Santa Margarita River mouth, Buena Vista Lagoon, Batiquitos Lagoon, and San Elijo Lagoon are the north county wetlands most heavily used by birds. Unfortunately, human activity has degraded to some extent all the coastal wetlands of San Diego County, with an adverse effect on much of the county's avifauna.

The lowland region inland from the coast is characterized by a series of marine terraces or mesas. Through time, streams cut canyons and valleys through the mesas. The result is a mosaic of habitats: riparian woodland and sycamore groves in the river valleys, coastal sage scrub or dense chaparral on the canyon sides and hillsides, and sparser chaparral, sometimes with scattered vernal pools, on the more level mesa tops. The extensive urban and agricultural development of much of the lowland zone has of course altered or replaced many of the natural habitats.

Above about 370 m (1200 feet) elevation, the marine terraces and clay-dominated soils of the coastal lowland give way to the rugged topography of the Peninsular Range geological province. Here the soil is composed primarily of decomposed granite, and in many areas large granite boulders or outcroppings form a conspicuous feature of the landscape. Since the coastal sage scrub vegetation com-

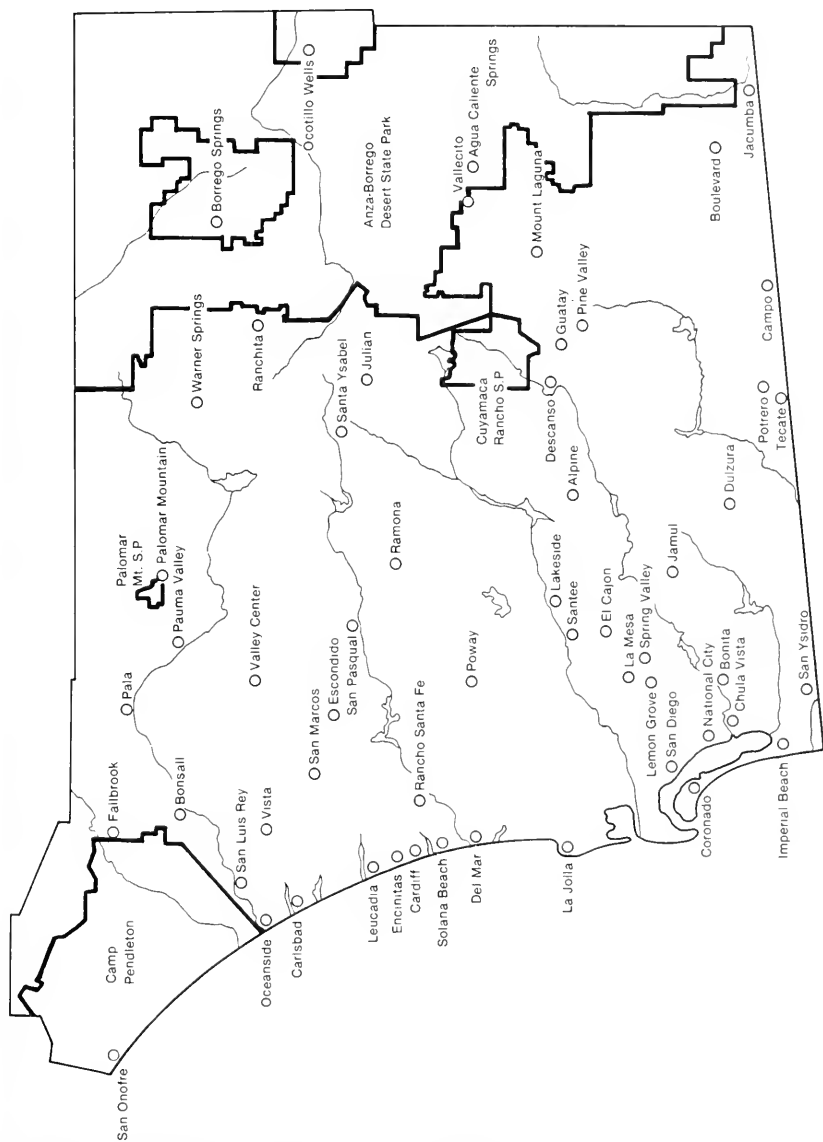
munity, an important factor in bird distribution, extends up to about 460 m (1500 feet), the latter elevation will be used here as the division between the lowland and foothill zones. Also, the riparian woodland community is of very limited extent above 460 m. Most of the foothill zone is covered with dense chaparral. The scattered valley bottoms are often vegetated with grasses and low herbaceous plants, while the narrower canyon bottoms and the margins of the valleys usually support a live oak woodland. In some places, such as near Santa Ysabel, oaks are scattered in grassland to form an oak savanna.

In some places above about 1220 m (4000 feet) elevation, temperature and rainfall conditions permit the growth of coniferous trees. So distinct a combination of bird species inhabits this vegetation community that the areas over 1220 m may be considered a separate montane zone. This zone is not one continuous region, but is broken into sections representing the five major mountains or mountain ranges. Hot Springs (1991 m = 6533 feet) and Palomar (1871 m = 6140 feet) mountains, in northern San Diego County, support 'islands' of coniferous woodland, isolated from other tracts of this habitat by expanses of chaparral and grassland. The other three ranges, Volcan (1743 m = 5719 feet), Cuyamaca (1985 m = 6512 feet), and Laguna (1944 m = 6378 feet) in the central part of the county are more intimately connected with each other. Several other isolated peaks over 1220 m rise out of the foothill zone, but their significance to bird distribution has not yet been studied. The montane woodland habitats of San Diego County are isolated from similar habitats both to the north in the San Jacinto and Santa Rosa mountains, and to the south in the Sierra Juarez.

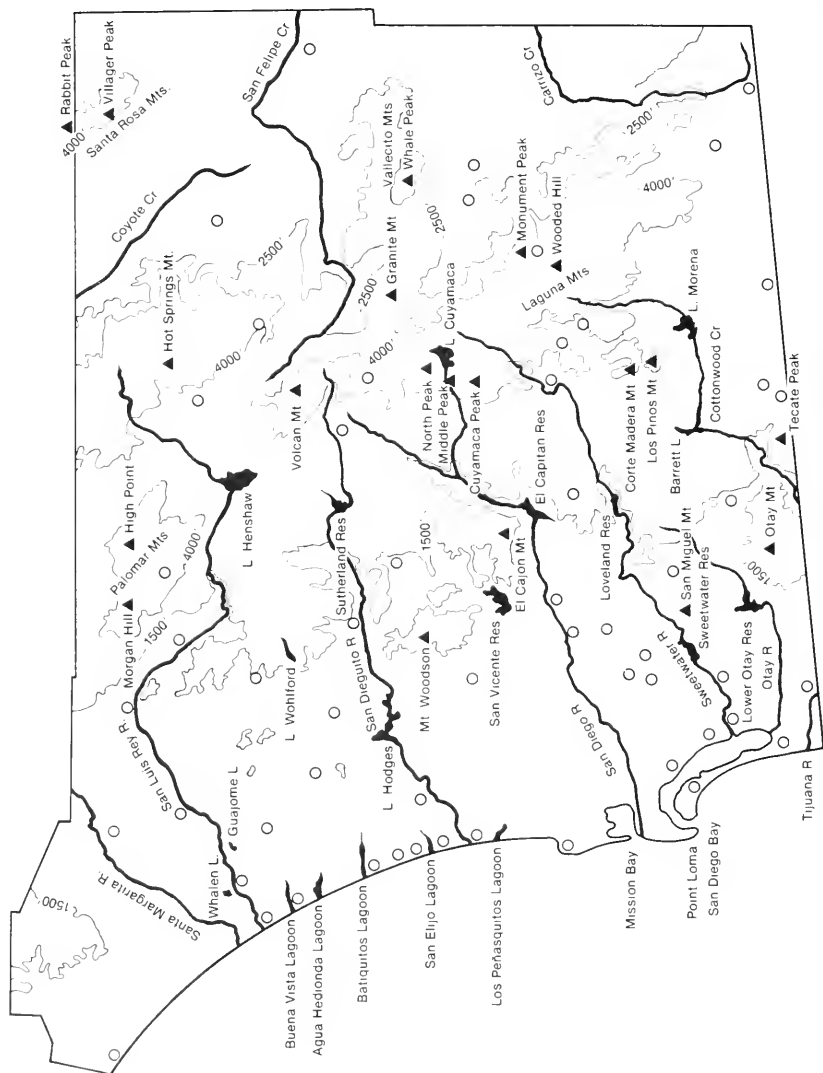
The eastern slopes of the mountains are generally steep and rocky. A narrow desert-edge zone may be distinguished between about 760 and 1220 m (2500 and 4000 feet). This zone also extends to over 1520 m (5000 feet) in the higher ranges of the Anza-Borrego Desert: the Santa Rosa and Vallecito mountains, and Granite Mountain. This zone is largely an ecotone between chaparral and desert scrub.

The easternmost region of the county is the Anza-Borrego Desert. This vast area is characterized as a whole by extreme aridity and high summer temperatures, but within it occurs a variety of land forms and habitats. Rocky hills and broad alluvial fans occupy much of the desert, and support a very sparse vegetative cover. Another desert landform is found in the Borrego Badlands. Here the sedimentary substrate has been deeply carved by the rare heavy rains, producing a contorted land surface. The ground is almost completely devoid of vegetation and the area supports very few birds. Dry lake beds such as the Borrego Sink and Clark Dry Lake are another feature of the Anza-Borrego Desert. Only in Coyote Creek and Sentenac canyons is there permanent flowing surface water.

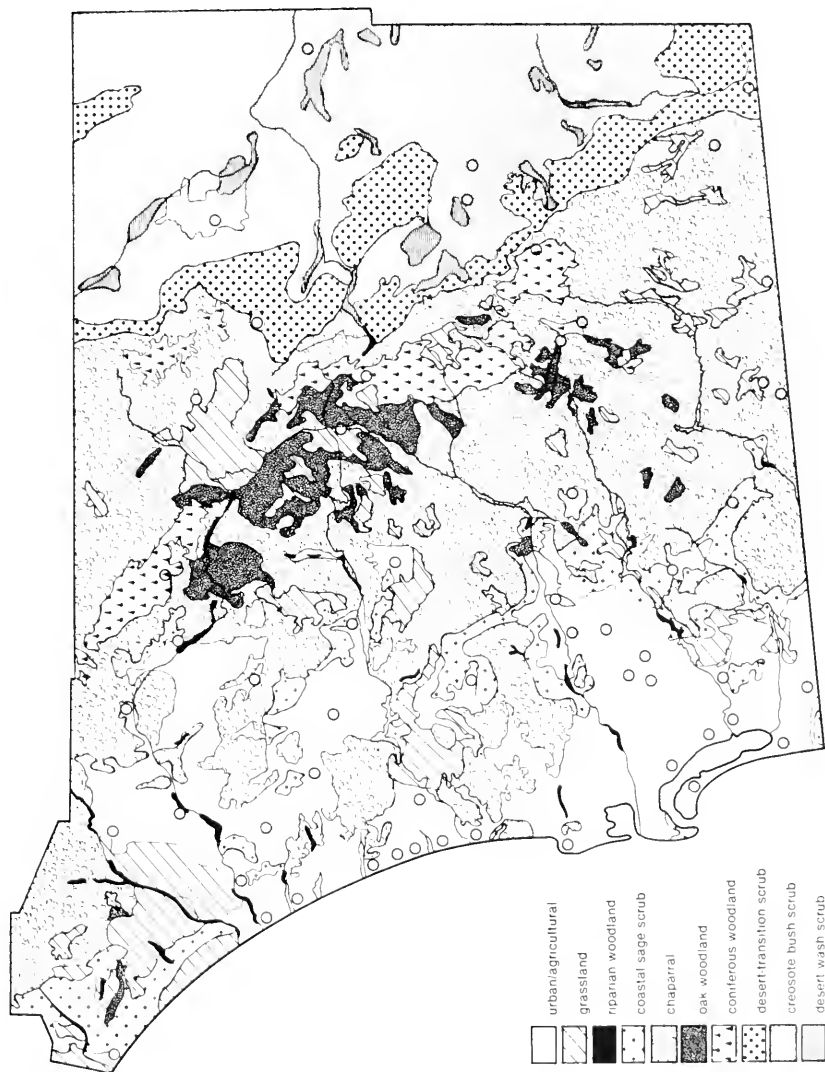
Conditions of climate vary greatly through San Diego County, and have an important impact on bird distribution, especially on the timing of the nesting season. Along the



MAP A. Principal localities named in San Diego County.



MAP B. San Diego County topography.



MAP C. San Diego County vegetation communities, simplified from a 1979 map by Thomas A. Oberbauer.

coast, temperatures fluctuate within a rather narrow range, from an average low of about 7° C. (45°F.) in winter to an average high of about 26° C. (78° F.) in summer. Rainfall distinguishes the seasons more sharply than does temperature. Almost all rain falls from November to April; the months from May to October may be completely dry. Within the rainy season, precipitation is quite irregular. Long dry spells may occur even in February, on the average the rainiest month. Often two or three storms account for the bulk of the year's precipitation at San Diego. There are also great variations in rainfall from year to year, from a low of 88 mm (3.46 inches) to a maximum of 633 mm (24.93 inches) at San Diego (Lindbergh Field). The average annual rainfall for both San Diego and Oceanside is between 250 and 280 mm (10 and 11 inches). Most birds of the coastal lowland, especially the sedentary residents, nest in March and April, before the summer drought suppresses vegetative growth and reduces the food supply. An outstanding feature of the dry season is the fog or low stratus clouds which often cover the coast during the night and morning hours. This fog is caused by warm air being cooled over the colder ocean water, resulting in condensation. It has an appreciable local effect on bird migration since birds cannot use their celestial navigation when the sky is hidden, and the fog often obscures terrestrial landmarks as well. As a result, migrating land birds tend to concentrate along the coast if the fog is persistent.

In the inland valleys of the coastal lowland and in the foothill zone temperatures are more extreme. Summer highs average 31° to 34° C. (88°-94° F.). The rainfall regime in these areas is similar to that along the coast, but totals are higher, 300-500 mm (12-20 inches) annually, and summer showers are more frequent.

The mountain zone is the coolest and most humid region of San Diego County. In winter freezing temperatures are the rule (lows average -2° to 0° C. (28-32° F.), and precipitation often falls as snow. Freezing weather may occur late in the spring, so most birds nest in May and June. High temperatures in summer average 29° to 31° C. (84°-88° F.). In most of the mountain zone, annual precipitation is 500-1020 mm (20-40 inches) but Palomar Mountain is significantly more humid, with an average of 1220 mm (48 inches). The severity of the dry season is relieved by occasional thundershowers.

The Anza-Borrego Desert lies in the rain shadow of the Peninsular Ranges, so precipitation is very sparse and irregular, with an annual average of only 86 mm (3.4 inches) at Borrego Springs. Summer heat is extreme, with average highs of 41° to 46° C. (105°-115° F.), and a maximum of 49° C. (121° F.). Most resident birds of the desert probably nest in late winter. At least two local breeding birds, Costa's Hummingbird and Phainopepla, migrate out of the Anza-Borrego Desert from June to October. Adaptation of birds to this severe climate need further study.

San Diego County Vegetation

Plants and vegetation communities are so important to the distribution of most birds that it is worthwhile to examine them in detail. The following discussion is based primarily on a summary written for this book by Thomas Oberbauer, a leading San Diego County botanist.

The coastal strand vegetation community grows on the beaches and sand dunes which separate the bays, lagoons, and estuaries from the ocean. The plants of this community are small herbaceous or succulent forms which are often prostrate. They cover the surface sparsely, leaving wide areas of bare sand. The most common species are sea rocket (*Cakile maritima*), beach primrose (*Camissonia cheiranthifolia*), bather's delight or beach bur (*Ambrosia chamissonis*), beach morning glory (*Calystegea soldenella*) and various rattleweeds (*Astragalus* spp.). Bird diversity is low in coastal strand vegetation. Snowy Plover, Least Tern, and Horned Lark are the only regular nesting species. Killdeer, Black-bellied Plover, Least Sandpiper, Water Pipit, Western Meadowlark, and House Finch also visit this habitat to forage. Other shorebirds, gulls, and terns often rest on beaches but make little use of the vegetation community. Coastal strand vegetation has been replaced by urban development in many places such as Mission Beach, and elsewhere has been degraded by frequent human disturbance. The community is preserved best in Border Field and Silver Strand state parks.

Coastal wetlands that are at least occasionally flooded by the tides support the salt marsh vegetation community. Plant species composition varies in different areas, depending on how frequently the surface is inundated. Cordgrass (*Spartina foliosa*) forms nearly pure stands in places covered by shallow water for long periods. On higher ground, flooded only by the highest tides or strong winter storms, the vegetation is dominated by low-growing succulents. Pickleweed (*Salicornia virginica*) is the most abundant species; other common plants are *Frankenia grandifolia*, *Jaumea carnosa*, Bigelow's glasswort (*Salicornia bigelovii*), *Batis maritima*, sea-lavender (*Limonium californicum*), salt grass (*Distichlis spicata*), salt-cedar (*Monanthochloë littoralis*), and dodder (*Cuscuta salina*). Rather few species of birds nest in coastal salt marshes. Daily flooding of the habitat is a difficult problem which is challenged only by Clapper Rails, and even they have many eggs washed away. In the higher zones of the marsh, which are seldom or never flooded, several other species nest: Mallard, Gadwall, Cinnamon Teal, Redhead, Ruddy Duck, Northern Harrier (at least formerly), American Coot, Black-necked Stilt, American Avocet, Western Meadowlark, and Belding's Savannah Sparrow. The coot and ducks are more numerous and widespread in the lagoons where the salt water is diluted by fresh, and less directly influenced by the tides. The coastal salt marshes are essential to Clapper Rails and



PHOTOGRAPH 2. Salt marsh in the Tijuana River Estuary at high tide. Cordgrass (*Spartina foliosa*) and Pickleweed (*Salicornia virginica*) are important plants. Clapper Rail and Belding's Savannah Sparrow nest here, and many shorebirds, ducks, and herons (including Louisiana Heron and occasionally Reddish Egret) visit while not breeding. Photograph by John P. Rieger.

Belding's Savannah Sparrows, but their greatest value is to birds which do not nest in San Diego County—the many migratory wading birds, waterfowl, and shorebirds which forage in the marshes, on nearby mudflats, and in adjacent water.

The freshwater marsh vegetation community grows in shallow standing water or on perennially saturated ground. The dominant plants here are cattails (*Typha latifolia*, *T. angustifolia*), bulrushes (*Scirpus americanus*, *S. robustus*, *S. californicus*), smartweed (*Polygonum* spp.), and dock (*Rumex* spp.). Least Bittern, Cinnamon Teal, Ruddy Duck, Virginia Rail, Common Gallinule, American Coot, Black Phoebe, Marsh Wren, Common Yellowthroat, Red-winged and Tricolored Blackbirds, and Song Sparrow are characteristic breeding birds of this habitat. In an arid and rugged region like San Diego County, freshwater marshes are naturally small and scattered. Patches of this habitat are present at the upper ends of Buena Vista, Agua Hedionda, Batiquitos, and San Elijo lagoons, where they are often mixed with plants of the salt marsh community. Small freshwater marshes grow around many lakes and ponds on the coastal slope. The largest tracts are found at Guajome Lake, near San Pasqual, in Mission Valley, and at Sweetwater Reservoir. In the Anza-Borrego Desert, the only substantial marshes are San Sebastian Marsh at Lower Willows in Coyote Creek Canyon, and on San Felipe Creek at the head of Sentenac Canyon. Carrizo Marsh on Car-

rizo Creek was destroyed in 1976 by Hurricane Kathleen. Flood control and other development projects threaten many of the remaining freshwater marshes of San Diego County.

The terrestrial vegetation community nearest the coast is the coastal sage scrub. This community is found in sunny, dry areas below about 460 m (1500 feet) elevation that receive under 380 mm (15 inches) of rain per year. The plants of the coastal sage scrub are mostly shrubs two to four feet high, which cover the ground almost continuously, but not so densely as to be difficult to walk through. Many of the shrubs are summer-deciduous in response to the long dry season. The dominant species are California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), lemonadeberry (*Rhus integrifolia*), and laurel sumac (*Malosma laurina*). Birds are rather few in this habitat, but some species prefer it: Greater Roadrunner, Cactus Wren, California (Black-tailed) Gnatcatcher and Rufous-crowned Sparrow, as mentioned in the introduction. Some species more abundant in chaparral also inhabit coastal sage scrub, such as Bush-tit, Brown Towhee, Sage and Black-chinned Sparrows. Conservation of this vegetation community and its birds is an immediate challenge; at least 70% of the original acreage of coastal sage scrub of San Diego County had been destroyed by 1979, according to T. A. Oberbauer.



PHOTOGRAPH 3. Coastal sage scrub near the upper end of Sweetwater Reservoir. California sagebrush (*Artemisia californica*) is the most abundant plant. Laurel sumac (*Malosma laurina*) is also visible. This is an excellent locality for California (Black-tailed) Gnatcatchers. Photograph by John P. Rieger.



PHOTOGRAPH 4. Coastal sage scrub on the slope of Spooner's Mesa, south of the Tijuana River Valley. Dominant plants are California sagebrush (*Artemisia californica*), Flat-top buckwheat (*Eriogonum fasciculatum*), Tuna cactus (*Opuntia* sp.), and Coast barrel cactus (*Ferocactus viridescens*). These slopes are a stronghold for the California (Black-tailed) Gnatcatcher, while Sage Sparrows reside on the top of the mesa. Greater Roadrunners often are seen here. Photograph by M. U. Evans, Spring 1982.



PHOTOGRAPH 5. Chaparral along La Posta Truck Trail, south slope of Laguna Mountains. *Ceanothus leucodermis* is blooming in the foreground; chamise (*Adenostoma fasciculatum*), *Ceanothus gregii*, scrub oak (*Quercus dumosa*), and manzanita (*Arctostaphylos* sp.) are in the background. Scrub Jay, Bush tit, Bewick's Wren, Wren tit, California Thrasher, and Rufous-sided Towhee are characteristic permanent residents of this habitat; Hermit Thrush, Fox Sparrow, and Dark-eyed Junco are numerous in winter. Black-chinned Sparrow is a common summer resident here, and this locality is one of the few in San Diego County known to support Gray Vireo. Photograph by Philip Unitt, April 1984.

Chaparral is the most widespread vegetation community in San Diego County, covering about 35% of the land surface. Chaparral is composed of shrubs with hard evergreen leaves and stiff woody stems. The shrubs grow generally five to twelve feet high and have such dense foliage that the habitat it is almost impossible to walk through. Plant species composition varies greatly from region to region within the county, and the community can easily be subdivided into finer categories, but the birds are not much different among the various types of chaparral. The most abundant and widespread plant is chamise (*Adenostoma fasciculatum*). Among the many other chaparral components, manzanitas (*Xylococcus bicolor* and *Arctostaphylos* spp.), *Ceanothus* spp., toyon (*Heteromeles arbutifolia*), coast spice bush (*Cneoridium dumosum*), holly-leaf redberry (*Rhamnus ilicifolia*), *Yucca whipplei*, smooth mountain-mahogany (*Cercocarpus minutiflorus*), redshank (*Adenostoma sparsifolium*) and scrub oak (*Quercus dumosa*) are some of the important species. California and Mountain Quail, Anna's Hummingbird, Scrub Jay, Bush tit, Wren tit, Bewick's Wren, California Thrasher, House Finch, Rufous-sided and Brown Towhees, Sage and Black-chinned Sparrows are prominent and characteristic breeding birds of chaparral.

Habitats dominated by low-growing herbaceous plants are grouped under the term grassland. In the lowland and foothill zones, grasslands are composed almost entirely of

non-native grasses such as wild oats (*Avena* spp.), red brome (*Bromus rubens*), soft chess (*B. mollis*), ripgut (*B. diandrus*), foxtail (*Hordeum leporinum*), and fescues (*Festuca* spp.), and herbaceous dicots such as filarees (*Erodium* spp.) and mustards (*Brassica* spp.). These plants are native to the Mediterranean region and were introduced by European settlers. They had largely replaced the native grassland species before San Diego County was explored ornithologically, so we have no way of knowing what effect this ecological calamity had on the native birds. Native perennial bunchgrasses (*Stipa* spp.) are now uncommon and localized. Patches of grassland habitat are scattered throughout the lowland and foothill zones on rolling hillsides and valley floors. The largest tract in San Diego County lies in the broad plain and valleys extending north and east of Lake Henshaw. In the mountain zone, moist meadows represent another grassland habitat. The plant species here, rushes (*Juncus* spp.) and sedges (*Carex* spp.), are different from those in grasslands at lower elevations, but the birds are rather similar. The principal breeding birds of this habitat are Killdeer, Horned Lark, Western Meadowlark, and Grasshopper Sparrow. In addition, many other species nest in trees or shrubs that are adjacent to or scattered in grassland, and depend on the grassland as foraging habitat. Quite a few non-breeding visitors to San Diego County, especially birds of prey, prefer this vegetation community.



PHOTOGRAPH 6. Riparian woodland dominated by willow trees (*Salix* spp.) along the San Diego River in Mission Valley. *Scirpus olneyi* and the non-native *Arundo donax*, plants characteristic of the fresh-water marsh community, are growing along the water. Some of the many breeding birds of this habitat are Red-shouldered Hawk, Nuttall's Woodpecker, American Goldfinch, Common Yellowthroat, Black-headed Grosbeak, Song Sparrow, Brown-headed Cowbird, and Bullock's Northern Oriole. Several species are characteristic of riparian woodland but are uncommon or restricted in distribution: Downy Woodpecker, Willow Flycatcher, Swainson's Thrush, Bell's Vireo, Yellow Warbler, and Yellow-breasted Chat. Warbling Vireo and Blue-gray Gnatcatcher once nested in riparian woodland, but have been eliminated by cowbird parasitism. Photograph by John P. Rieger.



PHOTOGRAPH 7. Riparian woodland in Mission Valley, showing fresh-water marsh vegetation (*Scirpus olneyi*) in foreground. Photograph by John P. Rieger.

Riparian woodland covers less than one half of one percent of the county's area yet is of major importance to birds. This vegetation community grows in strips along rivers in damp sandy soil. The dominant plants are willows (*Salix hindiana*, *S. laevigata*, *S. lasiandra*, *S. lasiolepis*), cottonwoods (*Populus fremontii*, *P. trichocarpa*), sycamore (*Platanus racemosa*), and white alder (*Alnus rhombifolia*). In addition to these canopy trees and large shrubs, dense undergrowth is an important part of the riparian community. Mulefat (*Baccharis glutinosa*), mugwort (*Artemisia douglasiana*), stinging nettle (*Urtica holosericea*), and wild cucumber (*Marah macrocarpa*) are among the common riparian undergrowth plants. Riparian woodland is outstanding for its rich diversity of breeding birds. These include Green Heron, Red-shouldered Hawk, Black-chinned and Anna's Hummingbirds, Downy and Nuttall's Woodpeckers, Black Phoebe, Willow and Western Flycatchers, Bushtit, House Wren, Swainson's Thrush, Blue-gray Gnatcatcher (formerly), Bell's Vireo, Warbling Vireo (formerly), Orange-crowned and Yellow Warblers, Common Yellowthroat, Yellow-breasted Chat, Northern Oriole, Brown-headed Cowbird, Black-headed and Blue Grosbeaks, American and Lesser Goldfinches, and Song Sparrow. Unfortunately, much of this habitat has been destroyed for agricultural,

residential, commercial, or flood control developments, as pointed out in the introduction.

Canyon bottoms which do not have quite enough water to support the full variety of riparian woodland vegetation often contain open groves of sycamore trees. The shrubbery underneath these trees is sparser than the jungles in riparian woodland, and mulefat is the most prominent plant. Some characteristic breeding birds of sycamore groves are White-tailed Kite, Red-tailed Hawk, American Kestrel, Mourning Dove, Black-chinned Hummingbird, Common Flicker, Western Kingbird, Ash-throated Flycatcher, House Wren, Phainopepla, Lazuli Bunting, Lesser and Lawrence's Goldfinches, and Lark Sparrow. Most of these species are equally at home along the interface between riparian woodland and grassland.

In canyon bottoms, on north-facing slopes, and around the edges of valleys, dense groves of live oaks form another major habitat. In the lowland and foothill zones, coast live oak (*Quercus agrifolia*) dominates, while in the mountain zone canyon live oak (*Q. chrysolepis*) is more common. Undergrowth plants important in this community are poison oak (*Toxicodendron diversilobum*), currants and gooseberries (*Ribes* spp.), wild grape (*Vitis girdiana*), snowberry (*Symphoricarpos mollis*) and elderberry (*Sambucus* spp.).



PHOTOGRAPH 8. Oak woodland, dominated by Coast live oak (*Quercus agrifolia*), fringing Sanagatuma Valley near Descanso. Chaparral-covered hillsides, groves of oaks along the hill bases, and grassy valley floors form a combination typical of the foothill zone. Acorn and Nuttall's Woodpeckers, Scrub Jay, Plain Titmouse, and Western Bluebird, among others, are common birds of this habitat. Photograph by F. Oberbauer, Spring 1982

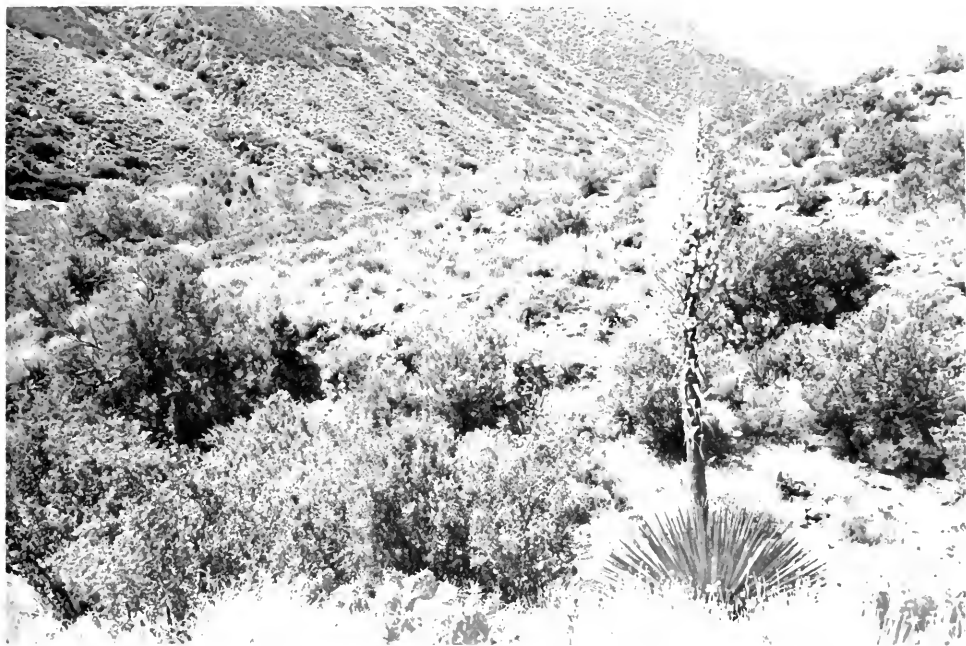
In many places, oak woodland is mixed with or adjacent to riparian woodland, but oaks do not grow along the coast. Cooper's Hawk, Screech Owl, Acorn and Nuttall's Woodpeckers, Western Wood Pewee, Scrub Jay, Plain Titmouse, House Wren, Western Bluebird, Hutton's Vireo, and Black-headed Grosbeak are some of the typical breeding birds of this vegetation community. Another type of oak woodland grows in some parts of the foothill zone that have hot summers but receive over 430 mm (17 inches) of rain per year. This is sparse oak woodland or oak savanna, a habitat in which Engelmann oak trees (*Q. engelmannii*) are widely scattered in grassland. Originally, the ground cover was white sage (*Salvia apiana*), but two centuries of cattle grazing have resulted in its replacement in most places by the introduced grasses. The birds of oak savannas have been little studied in San Diego County, but many of the species listed for dense oak woodland plus most

of those listed for sycamore groves should be expected there. Most of the birds which inhabit broken woodland or woodland edges show no special preference among deciduous trees, live oaks, or conifers.

The coniferous woodland vegetation community is restricted to the mountain zone in places that receive over 460 mm (18 inches) of rain per year. Coniferous trees are the dominant plants of this community, but canyon live oak and the deciduous black oak (*Quercus kelloggii*) are also important members. The composition and character of this community varies with humidity and exposure. In drier, flatter areas, the trees are more widely spaced, there is little ground cover, and Jeffrey (*Pinus jeffreyi*) and Coulter (*P. coulteri*) pines dominate. In more humid areas, such as Palomar Mountain or steep north-facing slopes of other mountains, the conifers are more diverse. The important species are incense-cedar (*Calocedrus decurrens*), white fir



PHOTOGRAPH 9. Aerial view of mixed pine-oak woodland near Mount Laguna, habitat for Band-tailed Pigeon, Acorn, Nuttall's, and Hairy Woodpeckers, Common Flicker, Olive-sided Flycatcher, Western Wood Pewee, Violet-green Swallow, Steller's Jay, Mountain Chickadee, White-breasted and Pygmy Nuthatches, American Robin, Western Tanager, Purple Finch, and Dark-eyed Junco, among others. Photograph courtesy of Cleveland National Forest.



PHOTOGRAPH 10. Desert-edge scrub in Oriflamme Canyon with Our Lord's candle (*Fouca whipplei*), Desert apricot (*Prunus fremontii*), Flat-top buckwheat (*Eriogonum fasciculatum*), and Silver cholla (*Opuntia echinocarpa*). Scott's Oriole is confined to this habitat as a breeding bird in San Diego County. Other common birds of desert-edge scrub include Scrub Jay, Bushtit, Bewick's Wren, California Thrasher, and Black-chinned Sparrow. Photograph by M. U. Evans, spring 1982.

(*Abies concolor*), sugar pine (*Pinus lambertiana*, Cuyamaca and Hot Springs mountains only), ponderosa or yellow pine (*P. ponderosa*), and big-cone Douglas-fir (*Pseudotsuga macrocarpa*, Palomar and Volcan mountains only). Characteristic breeding birds of this habitat include Band-tailed Pigeon, Spotted and Saw-whet Owls, Hairy and White-headed Woodpeckers, Olive-sided Flycatcher, Violet-green Swallow, Steller's Jay, Mountain Chickadee, White-breasted and Pygmy Nuthatches, Brown Creeper, American Robin, Solitary Vireo, Black-throated Gray Warbler, Western Tanager, Purple Finch, and Dark-eyed Junco. Most of the species listed under oak woodland also occur here.

A scrub vegetation covers most of the desert-edge zone on the east side of the mountains between about 760 and 1220 m (2500 and 4000 feet) elevation. This community includes many components of chaparral and creosote bush scrub, as well as several distinctive plants. The most prominent of these is California juniper (*Juniperus californica*); others include turpentine broom (*Thamnosma montana*), desert apricot (*Prunus fremontii*), *Condaliopsis parryi*, *Nolina bigelovii*, and *Quercus turbinella*. Also included in this community is the vegetation of the mountains of the

Anza-Borrego Desert above 1220 m: the Santa Rosas, Vallecitos, Granite, and Sawtooth. In those areas is found a very open woodland in which piñon pines (*P. monophylla* and *P. quadrifolia*) as well as junipers are conspicuous plants. Some of the birds of desert-edge habitat are Mountain Quail, Ladder-backed Woodpecker, Scrub Jay, Bushtit, Bewick's and Rock Wrens, California Thrasher, Scott's Oriole, House Finch, Brown Towhee, and Black-throated and Black-chinned Sparrows.

Two vegetation communities characterize the Anza-Borrego Desert. Around springs, in washes, and in canyon bottoms are dense growths of shrubs with scattered small trees up to 5 m (15 feet) tall. The most common plants are cat-claw (*Acacia greggii*), smoketree (*Psoralea argophylla*), ironwood (*Olecea tesota*), mesquite (*Prosopis glandulosa*, *P. pubescens*), and desert-willow (*Chilopsis linearis*). Native fan palms (*Washingtonia filifera*) grow in a few canyons. Characteristic birds of this desert wash scrub community are California Quail, Gambel's Quail (Borrego Valley only), White-winged and Mourning doves, Costa's Hummingbird, Ladder-backed Woodpecker, Verdin,

Bewick's and Cactus Wrens, Black-tailed Gnatcatcher, Phainopepla, and House Finch.

Most of the desert region is covered with a sparse scrub in which the creosote bush (*Larrea tridentata*) is the most common shrub. This creosote bush scrub community is adapted to the most arid conditions in San Diego County, and the density of plants is much lower than in other vegetation communities. Other important desert plants are ocotillo (*Fouquieria splendens*), brittlebush (*Encelia farinosa*), jumping cholla (*Opuntia bigelovii*), barrel cactus (*Ferocactus acanthodes*), and burrobush (*Ambrosia dumosa*). Birds are also very sparse in this habitat. Greater Roadrunner, Say's Phoebe, Horned Lark, Common Raven, Loggerhead Shrike, and Black-throated Sparrow are some typical species.

Man-made habitats now take up over 17% of the area of San Diego County, so they must be considered on the

same level as natural vegetation communities. As pointed out in the introduction, some birds have adapted so well to the domesticated landscape that they are now more common in artificial than in natural habitats. Substantial portions of the lowland and foothill zones have been cleared of their original vegetative cover and converted to agricultural use. Tomatoes, avocados, and citrus fruits are the principal crops; others such as strawberries, ornamental flowers, cauliflower, celery, cucumbers, barley, and alfalfa take up small areas. Milk and beef cattle are also important agricultural products in San Diego County, but pastures and rangeland are here considered as grassland habitats. Agricultural areas are used by a limited variety of birds. A few species such as Mockingbird, House Finch, Lark and Chipping Sparrows nest in avocado and citrus orchards. During migration and in winter, large numbers of Horned Larks, Water Pipits, and Savannah Sparrows forage on land



PHOTOGRAPH 11. Desert wash scrub in San Felipe Creek just east of Tamarisk Grove Campground, with Ironwood (*Oleña tesota*), Paloverde (*Cercidium floridum*), and Smoketree (*Psoralea argemone*). Greater Roadrunner, Ladder-backed Woodpecker, Verdin, Black-tailed Gnatcatcher, and Phainopepla occur here. Photograph by John P. Rieger.



PHOTOGRAPH 12. Creosote bush scrub along County Highway S-2 in the southeastern Anza-Borrego Desert. Dominant plants here are Ocotillo (*Fouquieria splendens*), Creosote bush (*Larrea tridentata*), and Burrobush (*Ambrassia dumosa*). Birds are sparse in this austere habitat, but Say's Phoebe, Common Raven, Loggerhead Shrike, and House Finch usually may be seen. Photograph by T. Oberbauer, spring 1982.

devoted to field crops, especially after the crops have been harvested or before the young plants grow very tall. Certain rare visitors, such as Red-throated and Sprague's Pipits, Bobolink, and longspurs are most often reported from agricultural fields. Many migrating shorebirds find irrigated fields an attractive stopping place.

Residential neighborhoods are a suitable, even preferred habitat for several species of birds. Because of cultural attitudes, historical accidents, and climate, certain exotic plants useful to birds are a common feature of the urban and suburban environment. Eucalyptus trees that flower in winter are a valuable source of nectar, and indirectly of insects, to hummingbirds and many passerines. Silk oaks (*Grevillea robusta*), bottlebrushes, and other ornamental plants which flower in spring are a great attraction for migrating tanagers, orioles, and warblers. Tamarisk trees (*Tamarix* spp.) are attacked in fall by a certain small green

insect, a leafhopper of the family Jassidae, which is preyed upon in turn by insectivorous birds, especially warblers. Commonly grown berry-producing plants such as pyracantha and pepper trees are a food source for frugivorous species such as Mockingbird, American Robin, and Cedar Waxwing. The crevices among the leaf bases of palm trees are nest sites for birds that originally used cavities in trunks or branches. Fan palms, used both for nest material and placement, are the main reason for the Hooded Oriole establishing itself as a common urban bird. American Kestrel, Mourning Dove, Costa's and Anna's Hummingbirds, Scrub Jay, Mockingbird, American Robin, Hooded Oriole, House Finch, and Brown Towhee are the commonest native breeding birds of urban habitats. The introduced Domestic Pigeon, European Starling and House Sparrow are abundant urban birds as well.

SPECIES ACCOUNTS

Albatrosses

Family *Diomedidae*

SHORT-TAILED ALBATROSS

Diomedea albatrus Pallas

Accidental. During the 19th century, before it was reduced to the verge of extinction by plume-hunters at its nesting colonies, this species was common offshore throughout the year. Anthony (1924) wrote "A quarter of a century ago...ten miles [16 km] from land they [both Short-tailed and Black-footed Albatrosses] were almost certain to be found, and in the waters nearer land they were by no means uncommon...So far as my experience goes, there was no particular time of year when either species was more abundant." Cooper (1868) reported collecting three immatures even inside San Diego Bay. Anthony saw only immature birds though Cooper reported "an adult specimen in white plumage found dead on the beach at San Diego." The most recent specimen was taken off San Diego on 9 January 1896 (SD 68). There is one recent sight record, of an immature 145 km (90 miles) west of San Diego on 28 August 1977 (AB 32:256, 1978). It "was seen with a Black-footed Albatross...appreciably larger than the Black-footed Albatross and had a heavy-looking bill."

BLACK-FOOTED ALBATROSS

Diomedea nigripes Audubon

Uncommon to fairly common visitor from spring to early fall. Black-footed Albatrosses are highly pelagic off southern California. They are usually rare closer to shore than San Clemente Island; one which followed a boat to about 2 km (1 mile) off Mission Beach on 16 May 1981 (G. McCaskie) was exceptional. Three to six is an average number to be expected on a spring or summer day spent well off-shore. High counts are 25 near San Clemente Island on 1 August 1959 (AFN 13:454, 1959), 25 birds 97 km (60 miles) off San Diego on 5 September 1964 (AFN 19:78, 1965), and a very unusual 112 birds 40 km (25 miles) west of Point Loma on 6 August 1958 (AFN 12:436, 1958). Recorded dates for San Diego waters as defined here extend from 6 February (1960, one off Point Loma, AFN 14:341, 1960) and 16 March (1968, one off San Diego, AFN 22:477, 1968) to 14 September (1968, two off San Diego, AFN 23:106, 1969). Jehl (1973) noted Black-footed Albatrosses about 240 km (150 miles) off San Diego as late as 21 October in 1971, and it occurs throughout the year farther north

off California. The report of one on a San Diego Christmas Bird Count in 1966 (AFN 21:376, 1967) should be disregarded.

During the nineteenth century, all the North Pacific albatrosses were much more common than at present. Anthony (1924) described their status off California and Baja California, as noted under the preceding species. He noted them regularly between San Diego and Los Coronados Islands, and reported seeing the Black-footed in San Diego Bay "on one or two occasions."

Shearwaters, etc.

Family *Procellariidae*

NORTHERN FULMAR

Fulmarus glacialis rogersii Cassin

Irregular winter visitor, very common in some years, rare or absent in others. The Northern Fulmar is a pelagic species, but often occurs within sight of shore, and has been reported from San Diego Bay (Anthony 1895a, Linton 1908). Exhausted birds frequently wash up on beaches after storms. Maximum numbers during flight years are 205 on the San Diego Christmas Bird Count, 21 December 1963 (AFN 18:317, 1964); 100 on the San Diego Christmas Bird Count, 18 December 1971 (AB 26:523, 1972); 50 seen from shore during a storm at La Jolla on 3 March 1976; 80 near San Clemente Island on 29 March 1976 (AB 30:764, 1976); and 75 within 8 km (5 miles) of shore between San Diego and Del Mar on 28 March 1976 (P. Unitt). The timing of arrival and departure varies greatly from year to year. The earliest dates are "about the last of September" (off San Diego, years not specified, Anthony 1895a), 12 October (1931, five off Point Loma, SD 14980-5), and 14 October (1971, three in the Cortez Bank area, Jehl 1973). Fulmars often remain as late as early May, but very rarely later. Two near San Clemente Island on 31 May 1971 (AB 25:799, 1971) and one at La Jolla on 2 June 1976 (J. Dunn) are exceptional, and there is a single report for midsummer: two between San Diego and San Clemente Island on 17 July 1971 (AFN 25:905, 1971).

NEW ZEALAND SHEARWATER

Puffinus bulleri Salvin

Casual visitor in summer and fall, accidental in winter. Six summer and fall records: three near San Clemente Island on 2 November 1957 (AFN 12:58, 1958); one 40 km (25

miles) off Imperial Beach on 22 November 1969 (AFN 24:96, 1970); two between the north end of San Clemente Island and San Diego on 22 October 1971, one of which was only 21 km (13 miles) offshore (Jehl 1973); two 64–97 km (40–60 miles) off San Diego on 15 September 1973 (AB 28:106, 1974); one 121 km (75 miles) off San Diego on 10 August 1980 (AB 35:225, 1981); and eight 97 km (60 miles) off San Diego on 23 July 1981 (D. Povey). One found dead on Black's Beach north of La Jolla on 19 February 1976 (SD 39756, preserved as skeleton) is the only specimen and only winter record for the county. Also significant are six seen 10–97 km (6–60 miles) south-southwest of Los Coronados Island on 26 July 1977 (D. Povey).

PALE-FOOTED SHEARWATER

Puffinus carneipes Gould

Very rare visitor in spring and summer, with 10 records between 27 April and 9 September: one 24 km (15 miles) east of the south end of San Clemente Island on 1 September 1958 (Small 1959); one 48 km (30 miles) west of San Diego on 11 May 1961 (AFN 15:438, 1961); one off San Diego on 26 August 1966 (AFN 21:76, 1967); two off San Diego on 27 April 1968 (AFN 22:575, 1968), one of which was collected at Cortez Bank (SBCM 4111); one 19 km (12 miles) off Imperial Beach on 15 July 1968; one off San Diego on 27 July 1968 (AFN 22:647, one off San Diego on 16 August 1969 (AFN 24:96, 1970); three to four near San Clemente Island 31 May — 1 June 1971 (AB 25:800, 1971), two to three off San Diego on 9 September 1972 (AB 27:119, 1973), and two off San Diego on 16 May 1981 (G. McCaskie).

PINK-FOOTED SHEARWATER

Puffinus creatopus Coues

Common to abundant summer visitor, rare in winter. Pink-footed Shearwaters tend to stay well offshore; they are uncommon within 8 km (5 miles) of the coast, and are unreported as being seen from land. Like most other pelagic birds, numbers seen vary greatly, depending perhaps on food availability or oceanographic conditions. Fifty to 300 may usually be expected during a day's pelagic trip between San Diego and San Clemente Island; unusual concentrations are 6000 on 9 September 1972, and 3000 on 14 May 1977. Migrants begin to arrive in mid-April and quickly become numerous, with up to 2000 on 27 April 1968. Decrease in fall is more gradual, with the species being fairly common as late as November (15 on 22 November 1969, 6 on 21 November 1970, G. McCaskie). By December it is rare and there are only four reports for January through March: four off San Diego on 21 January 1968, one off San Diego on 16 March 1968 (AFN 22:477, 1968), one between San Diego and Los Coronados Islands on 22 January 1972, and two between San Diego and Los Coronados Islands on 27 February 1971 (G. McCaskie).

SOOTY SHEARWATER

Puffinus griseus (Gmelin)

Very common to abundant visitor in spring, summer, and fall; uncommon to fairly common in winter. The Sooty Shearwater is usually the most abundant species of its family off San Diego. It approaches closer to land than does the Pink-footed Shearwater, and can sometimes be seen from shore (50 at La Jolla on 17 May 1976, J. Dunn; 60 at La Jolla on 16 April 1976; four at Imperial Beach on 30 January 1970, G. McCaskie). As with the Pink-footed, spring migration of the Sooty Shearwater begins in mid-April. Expected numbers for a day from late spring to early fall are 100 to 500; exceptionally large estimates are 5000 on 9 September 1972, 500 on 14 May 1977 (G. McCaskie), and 10,000 on 22 June 1970 (AFN 24:715, 1970). Numbers gradually decline through October, November and December. Twenty off San Diego on 18 January 1969 (AFN 23:519, 1969) and 15 on 27 February 1971 (G. McCaskie) are large numbers for midwinter.

SHORT-TAILED SHEARWATER

Puffinus tenuirostris (Temminck)

Very rare winter visitor. Short-tailed Shearwaters have most often been found within 8 km (5 miles) of the coast, where they have associated with flocks of Black-vented Shearwaters, but have also been noted as far offshore as near San Clemente Island (three on 22 November 1959, AFN 14:71, 1960). The major occurrence of this species in San Diego County was during the winter of 1941–1942, when K. W. Kenyon (1942, 1943) collected 18 specimens, both at sea and as beached casualties, near La Jolla and on the Silver Strand between 28 October and 15 January. He observed a flock of at least 120 birds 0.4 km (0.25 mile) off La Jolla on 16 December 1941. There are only eleven reports from other years, from 22 November (cited above) to 20 April (1980, one 8 km [5 miles] off Mission Beach, AB 34:814, 1980). Maximum numbers involved in these other records are four off San Diego on 31 January 1971 (AB 25:827, 1971), three seen from shore during a storm at La Jolla on 1 March 1976 (AB 30:764, 1976), and four 3 km (2 miles) off La Jolla on 10 December 1977 (AB 32:398, 1978). Three additional specimens have been collected: 5 km (3 miles) west of Point Loma on 8 January 1896 (Anthony 1896), 32 km (20 miles) west of Mission Bay on 31 January 1971 (SBCM 4755), and at Point Loma on 26 February 1980 (SD 40914; found washed up in tidepools alive but starving). The remaining records are of single individuals seen off San Diego on 4 December 1966 (AFN 21:76, 1967) and on 24 November 1968 (AFN 23:106, 1968), and on the San Diego Christmas Bird Counts 26 December 1955 (AFN 10:221, 1956) and 15 December 1979 (AB 34:663, 1980).

BLACK-VENTED (MANX) SHEARWATER*Puffinus (puffinus) opisthomelas* Coues

Abundant winter visitor. The Black-vented Shearwater is not a strongly pelagic species, most individuals remaining within 24 km (15 miles) of the coast. Large numbers are often seen from shore, but the species has also been noted at least as far out as 56 km (35 miles) off San Diego (one on 8 May 1976, 10 on 18 September 1976, G. McCaskie). The largest numbers congregate near La Jolla when squid are spawning (5000 on 9 December 1967, G. McCaskie; 300 on 4 November 1974, AB 29:120, 1974; 11,700 on 14 November 1979, AB 34:200, 1980). Fall arrival is usually in early or mid-September, with very rare occurrences in late July and August (29 July 1926, two off Point Loma, SD 11205-6; 28 August 1925, three 16 km (10 miles) west of Point Loma, SD 9940-2; one off San Diego on 16 August 1969, AFN 24:96, 1970; three off La Jolla on 7 August 1978, D. Povey). Numbers peak from November to February, then decrease from March to May. Numbers as high as 25 off Oceanside on 15 May 1980 (AB 34:814, 1980) and 30 off San Diego on 19 May 1973 (AB 27:819, 1973) have been found as late as mid-May, but 20 May (1978, one off San Diego, AB 32:1054, 1978) is the latest spring record.

Subspecies: Most taxonomists combine *P. opisthomelas* with seven other races of small shearwaters to compose one very widespread species, Manx Shearwater *P. puffinus*. Black-vented, brownish-backed *opisthomelas* is the only form of this species or superspecies documented to occur in or near California. There are, however, three sight records of white-vented, black-backed Manx Shearwaters, one for San Diego County: 3 km (2 miles) off Carlsbad on 28 December 1980 (D. Povey). These birds must be vagrants of *P. (p.) newelli* Henshaw (breeding on Hawaiian Islands, dispersing widely in central Pacific, but restricted to tropical waters) or nominate *puffinus* (Brünnich) (breeding on North Atlantic islands, migrating to east coast of South America, accidental vagrant to Australia). I suspect they are nominate *puffinus*, since *puffinus* is a bird of the temperate zone, unlike *newelli*, but positive identification demands a specimen.

Storm-petrels

Family Hydrobatidae

WILSON'S STORM-PETREL*Oceanites oceanicus* (Kuhl) subsp.?

Casual fall visitor, three records. One was collected 40 km (25 miles) off San Diego on 31 August 1935 (L. Miller 1936), one was seen south of San Clemente Island on 5 September 1962 (AFN 17:67, 1963), and another was seen 10 km (6 miles) off San Diego on 3 September 1980 (AB 35:225, 1981).

Subspecies: The identity of the San Diego specimen needs to be redetermined critically, in light of present knowledge of variation in the species (see Watson 1975). Jouanin and Mouglin (in Mayr and Cottrell 1979) include California within the range of *O. o. exasperatus* Mathews.

LEAST STORM-PETREL*Halocryptena microsoma* Coues

Irregular fall visitor, abundant in some years, uncommon in others, occasionally absent (as in 1973). Least Storm-petrels occur far at sea, but also near the coast, being uncommon 8-16 km (5-10 miles) offshore, and sometimes closer. Sefton (1927a) collected one 460 m (500 yards) northeast of the whistling buoy, only 5 km (3 miles) south of Point Loma (SD 10727). Especially large numbers reached San Diego waters during 1970 (3000 on 17 September, AB 25:107, 1971), 1978 (500 on 9 September, AB 33:213, 1979), and 1979 (3200 on 8 September, AB 34:200, 1980). More usual are 35 on 16 August 1969 (AFN 24:96, 1970) and 15 on 23 August 1974 (AB 29:120, 1975). The species occurs principally from late July to late October, with largest numbers in August and September. Extreme dates are 19 July 1927, one collected "a short distance north of the Mexican boundary," Willett 1933) on the early side, 30 October (1978, three off San Diego, AB 33:213, 1979) and 1 November (1977, one 14 km [9 miles] off San Diego, D. Povey) on the late.

LEACH'S STORM-PETREL*Oceanodroma leucorhoa socorroensis* Townsend

Rare visitor in spring, common to very common in summer and fall. Leach's Storm-petrels are quite pelagic off San Diego, rarely being found closer than 40 km (25 miles) from shore. Numbers seen vary greatly from trip to trip, but 50-100 can usually be expected in a day in late summer or early fall spent well offshore. High estimates are over 400 near San Clemente Island on 1 September 1958 (AFN 13:62, 1959), 250 off San Diego on 16 August 1969 (AFN 24:96, 1970), and 375 off San Diego on 25 July 1973 (AB 27:917, 1973). Most observations are within the period 13 July (1979, thirty birds, 40 km [25 miles] off San Diego, AB 33:896, 1979) to 14 October (1971, six in the Cortez Banks area; eight on 17 October about 240 km [150 miles] out, Jehl 1973). Anthony (1895c) reported seeing "a number" and collecting "a small series" off San Diego during April and May 1895, but there are only three recent spring observations: two on 3 June 1972 (AB 26:808, 1972); one on 14 May 1977 (AB 31:1046, 1977); and two on 19 May 1979 (AB 33:805, 1979). The 200 reported on 27 April 1968 (AFN 22:575, 1969) were probably Black Storm-petrels. L. Miller (1918) collected an exceptionally early Leach's between San Clemente Island and San Diego on 22 March 1904 (MVZ 31219). More extensive study far offshore would probably reveal Leach's Storm-petrel to be regular through a longer segment of the year, since it winters

uncommonly only 300–500 km (200–300 miles) southwest of San Diego.

Subspecies: Most Leach's Storm-petrels seen off San Diego have white rumps, with fewer than 10% showing mostly or completely dark rumps, but unfortunately this tells us little about the origins of the birds which occur here. Geographic variation in Leach's Storm-petrel is complex, and in spite of comprehensive studies by Crossin (in King 1974) and Ainley (1980), no method of interpreting this variation in terms of the traditional concept of subspecies seems satisfactory. The situation is complicated by two distinct populations at Guadalupe Island, one nesting in summer, the other in winter. Each of the populations nesting on the islands off California and Baja California shows statistically significant differences in rump color and measurements, but the degree of overlap among them is so great that very few specimens taken at sea can be conclusively identified to subspecies. None of the published subspecific identifications of Leach's Storm-petrels collected off San Diego can be accepted at face value.

Mayr (1969) and Browning (1979) suggested that for two populations to be recognized as subspecies, more than 90% of the specimens should lie outside the zone of joint overlap in whatever characteristic is used to distinguish the two populations, or that 75% of a sample of one population overlaps no more than 3% of a sample of the other. Assuming the variation within each population is normally distributed, and knowing the mean and standard deviation of the distinguishing characteristics, subspecific distinctness can easily be tested using a table of Z-values of the normal distribution. Ainley (1980) provided all the necessary data for doing this test on the populations of Leach's Storm-petrel. He demonstrated the differences among various populations, but his proposed subspecies do not meet the 90% joint non-overlap requirement. Wing length is the variable of body size which permits the greatest separation among populations. Using this characteristic, Guadalupe Island breeding birds (both summer and winter) can be satisfactorily separated from North Atlantic and Aleutian populations, but all other populations would have to be considered intermediate. Rump color allows birds from the San Benito Islands (dark-rumped) to be distinguished from birds breeding in the North Atlantic, in the north Pacific from Humboldt County north, and on Guadalupe Island in winter (white-rumped), but birds from the Farallon, Channel, Los Coronados, and Guadalupe (summer breeding) islands show all gradations in rump color from white to dark and would have to be considered intermediate. At Guadalupe, winter and summer breeders cannot be distinguished at the 90% joint non-overlap level by any of the morphological characters used by Ainley, even though their differences are statistically significant, so his name *O. l. cheimomnestes* for the winter-breeding population must be considered a synonym of *O. l. socorroensis*. Variation in Leach's Storm-petrel defies categorization using traditional taxonomic methods.

Twelve specimens from San Diego County are preserved in SD. One was collected 48 km (30 miles) west of Point Loma on 3 September 1936 (19463), one was picked up on the beach at Torrey Pines State Reserve on 18 August 1972 (38215), and ten were collected 56 km (35 miles) west of San Diego on 25 July 1973 (38529–38). All have white rumps. Three have wings so short (136–139 mm) as to suggest they are of the Guadalupe summer-breeding population (*O. l. socorroensis*), and several others are at the small extreme for other populations. None is so large as to indicate it could not have come from Guadalupe. Birds from other sources probably visit San Diego County waters as well, but in the present state of knowledge, they can not be assigned to subspecies.

BLACK STORM-PETREL

Oceanodroma melanota (Bonaparte)

Very common to abundant visitor in spring, summer, and fall. The Black Storm-petrel is the most abundant storm-petrel off San Diego, and ranges closest to shore. It is often common 3–5 km (2–3 miles) from the beach, and has been identified from land. An average number for a day's pelagic trip from late April through September is 100–200, though like other oceanic birds it fluctuates considerably in abundance. Maximum estimates off San Diego are 1200 on 12 September 1970, 2000 on 17 September 1970 (AB 325:107, 1971), and 1000 on 14 May 1977. Spring arrival is in early or mid-April, with an early date of 9 April (1971, 15 off San Diego, G. McCaskie). In fall, most depart in October; the only reports for November are of one 14 km (9 miles) off San Diego on 1 November 1977 on (D. Povey), and 10 between San Diego and Los Coronados Islands on 22 November 1969 (AFN 24:96, 1970). The Black Storm-petrel has been recorded only twice in winter, one on the San Diego Christmas Bird Count, 2 January 1961 (AFN 15:288, 1961; possibly not critically distinguished from Ashy Storm-petrel, which is more likely in winter), and five off San Diego on 18 January 1969 (AFN 23:519, 1969).

ASHY STORM-PETREL

Oceanodroma homochroa (Coues)

Rare visitor in fall, winter, and spring. The status of the Ashy Storm-Petrel is still obscure since it usually stays well offshore, and is so difficult to distinguish from the abundant Black Storm-Petrel. Ashy has been noted at least once in every month except February and June, but is probably most frequent in winter. The only records involving more than three individuals are 40 off San Diego on 4 December 1966 (G. McCaskie), and 10 on 18 January 1969 (AFN 23:519, 1969). The 20 reported on 1 September 1958 and 40 on 7 September 1959 (AFN 13:62 and 454, 1959) were probably misidentified. Early for fall are one between Newport Beach and San Diego on 25 July 1964 (G. McCaskie), one off La Jolla on 21 August 1978 (D. Povey), and two near the south end of San Clemente Island 28–30 August 1959 (AFN 11:428, 1957); late for spring are single

birds off San Diego on 19 May 1973 (AB 27:819, 1973) and 19 May 1979 (AB 33:805, 1979). Surprisingly, the Ashy is the storm-petrel reported most frequently from land. One was picked up after a storm on the Silver Strand, 2 May 1919 (Huey 1925, SD 2149); one was captured on San Diego Bay at the Broadway pier on 24 September 1936 (SD 17254); one was found on a sidewalk in downtown San Diego on 24 October 1959 (SD 29886); one was picked up in Balboa Park on 6 September 1962 (SD 30301); one was found dead at the San Diego River mouth on 28 April 1970 (AFN 24:643, 1970); one was seen during a storm at La Jolla on 1 March 1976 (AB 30:765, 1976); and one was found in an airplane hangar at Lindbergh Field on 22 November 1981 (SD 41597).

FORK-TAILED STORM-PETREL

Oceanodroma furcata plumbea (Peale)

Casual visitor in winter and spring. Five records: Ocean Beach, found dead on 23 December 1918 (Stephens 1919b, SD 2031); Cardiff, found exhausted 9 June 1939 (Huey 1939, SD 18075); 5–6 km (3–4 miles) off Point Loma, 15 November 1958 (AFN 13:63, 1959); La Jolla, seen from shore during storm on 3 March 1976 (AB 30:765, 1976); and 56 km (35 miles) off San Diego, photographed on 8 May 1976 (AB 30:888, 1976). A small invasion of Fork-tailed Storm-petrels reached southern California in spring 1976. The report of two near San Clemente Island on 3 September 1965 (AFN 20:91, 1966) is best disregarded.

Loons

Family Gaviidae

RED-THROATED LOON

Gavia stellata (Pontoppidan)

Uncommon to fairly common winter visitor, casual in summer. Red-throated Loons occur on bays, harbors, and estuaries, and on the ocean close to shore. This species does not show so conspicuous a peak of abundance in spring migration as do the other two loons: 20 at Mission Bay on 17 March 1976 (J. Dunn), and 24 at Coronado on 15 December 1979 (R. Webster) are high numbers. It occurs principally from early November to early May. Extreme dates are 25 October (1976, one at Point Loma, J. Dunn) and 19 May (1973, one at Border Field.) The Red-throated Loon has been reported only twice in summer: one seen at Shelter Island on 23 June 1974 (P. Unitt), and one found dead and decomposed in the Tijuana River Valley on 31 August 1977 (R. C. Smith). It is casual inland, with four reports of single birds more than a kilometer or two from the coast: Otay Lake, 8 March 1964 (G. McCaskie); Santee Lakes, 27 January – 19 February 1978 (AB 32:393, 1978); Lake Cuyamaca, 25–29 April 1978 (AB 32:1054, 1978); and Lake Henshaw, 12 November 1978 (AB 33:213, 1979).

ARCTIC LOON

Gavia (arctica) pacifica (Lawrence)

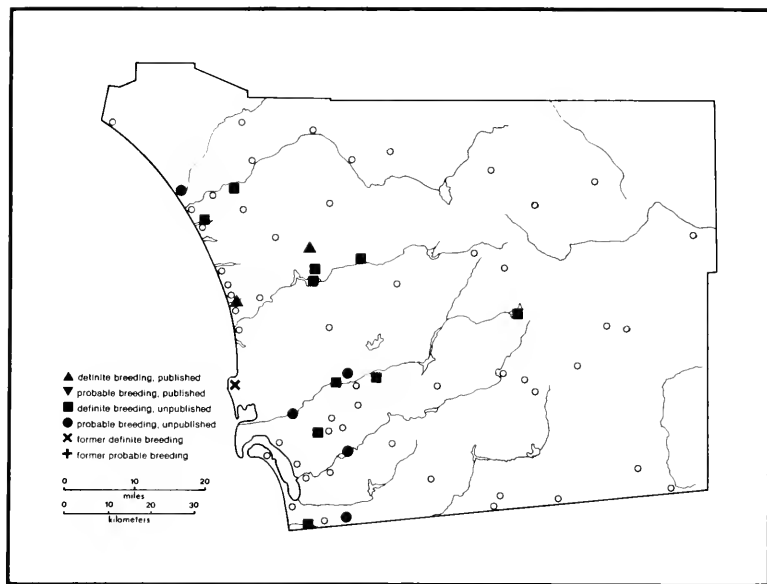
Common to abundant migrant and winter visitor, very rare in summer. Arctic Loons are the most pelagic of our three loons, being commonest on the ocean 2–16 km (1–10 miles) from shore, and uncommon to rare inside bays and harbors. The largest numbers are often encountered in May, when flocks of 50–75 birds in breeding plumage may be seen flying north, and a maximum of 500 was noted off San Diego on 15 May 1971 (G. McCaskie). Twenty to fifty is usual for a day offshore in winter, but in some years larger numbers are present, up to at least 679 on the ocean between Point Loma and Imperial Beach on 18 December 1976 (D. Povey). Migration dates are obscured in this species by summering birds. Fall migrants begin arriving in early October (two at Point Loma on 8 October 1973, J. Dunn), possibly in September (one off San Diego on 10 September 1977, G. McCaskie). Spring migration continues into early June, as illustrated by 25 off San Diego on 3 June 1972 (G. McCaskie). Arctic Loons have been found in summer a few times, as on 25 July 1973 (one off San Diego, G. McCaskie), and on 27 August 1976 (four at Encinitas, G. McCaskie). The species has been noted only twice on fresh water, with a single bird at Whalen Lake on 17 April 1980 (AB 34:814, 1980), and another at Lake Henshaw on 8 April 1981 (R. Higson).

Subspecies: *G. (a.) pacifica* may be specifically distinct from other forms of *G. arctica*, since it breeds sympatrically with *G. a. viridigularis* Dwight in the Anadyr Basin, Siberia, and possibly at Cape Prince of Wales, Alaska (Vaurie 1965). However, Gabrielson and Lincoln (1959) indicate that intergrades have been collected at Point Barrow.

COMMON LOON

Gavia immer (Brünnich)

Uncommon to fairly common migrant and winter visitor; rare to uncommon in summer. Common Loons occur primarily on the salt water of bays, harbors, and tidal lagoons along the coast. The species is usually uncommon in fall and winter: 36 on all of San Diego Bay on 20 December 1975 (AB 30:609, 1976) is a high count. It may be somewhat more numerous in spring, when small groups may be seen migrating over the open ocean (10 off San Diego on 8 May 1976, G. McCaskie), as well as along the coast. Exact periods of migration are difficult to determine since the species occurs throughout the year. In fall, Common Loons arrive mostly in October, with one seen migrating south over Point Loma as early as 26 September 1976 (G. McCaskie). Spring migrants are most prominent in April and early May, with some birds still moving through late May (two in breeding plumage on Mission Bay on 20 May 1978). A few individuals in non-breeding plumage remain on the coast through the summer, with up to three in the San Diego River mouth 25 July – 1 August 1978 (P. Unitt) and six along the Silver Strand on 22 July 1978 (G. McCaskie).



MAP 1. Breeding Distribution of Pied-billed Grebe (*Podilymbus podiceps*)

Common Loons occur also on inland lakes, principally in spring migration from 30 March (1968, one at Lake Henshaw, G. McCaskie) to 29 April (1978, nine at Lake Cuyamaca, AB 32:1054, 1978). Most inland sightings are of one or two individuals; the nine at Lake Cuyamaca is the highest inland count, except for a remarkable 93 at Lake Henshaw on 18 April 1981 (G. McCaskie). Probably large numbers of Common Loons migrate over San Diego County without stopping. The species also has been noted inland four times, in winter (one at Sutherland Reservoir on 9 January 1955, AFN 9:284, 1955; one at Lake Hodges on 5 January 1975, AB 29:740, 1975; one at Lake Henshaw on 18 November 1975, A. Fries, and 26 February 1979, AB 33:312, 1979) and three times in summer (one at Lake Henshaw on 25 July 1970, AFN 24:715, 1970; one at Lake Murray on 16 June 1978; and one at Lake Cuyamaca from 29 July to 5 September 1978, AB 32:1207, 1978).

Grebes

Family Podicipedidae

PIED-BILLED GREBE

Podilymbus podiceps podiceps (Linnaeus)

Fairly common resident on fresh-water lakes and brackish lagoons; fairly common winter visitor on salt water bays and

estuaries. Pied-billed Grebes are most widespread and numerous in winter along the coast and in the coastal lowland (up to 30 at Guajome Lake on 22 December 1979, I. MacGregor; 30 at Buena Vista Lagoon on the same date, E. J. McNeil, and 28 on San Diego Bay on 20 December 1980, A. Helbig), but occur also farther inland (six at Lake Cuyamaca on 17 October 1978). Very little information is available on the migration or dispersal of this species, but birds may be found on salt water as early as mid-or late August (one at Los Peñasquitos Lagoon on 18 August 1978, P. Unitt; two at the San Diego River mouth on 31 August 1974, C. Edwards), and migrants are regular on San Diego Bay by mid-October. Wintering individuals remain regularly on salt water into mid-April; 26 April (1974, one on Mission Bay, J. Dunn) is the latest recorded date for a non-breeding locality.

Pied-billed Grebes breed in dense marsh vegetation of fresh water ponds and lakeshores, and brackish lagoons. Such conditions are lacking in the Anza-Borrego Desert, and scarce in the rugged foothill and mountain zones. Egg dates (19): 24 April - 21 June; Sharp (1907) reported eggs in the Escondido area to 24 June. A few apparently breed in winter as well, indicated by a pair with one young at San Elijo Lagoon on 16 March 1974 (AB 28:948, 1948) and a pair with two chicks at Chollas Reservoir on 5 December 1978 (P. Unitt).

HORNED GREBE

Podiceps auritus cornutus (Gmelin)

Fairly common to very common winter visitor. Horned Grebes occur principally on San Diego Bay, where 15–50 are usually present in winter. Occasionally larger numbers are found, as up to 150 on 30 November 1955 (AFN 10:55 1956) and 250 on 22 February 1975 (J. Dunn). The species is generally uncommon elsewhere on harbors and estuaries, and on the ocean close to shore. Numbers as high as 30 at the San Luis Rey River mouth on 1 January 1977 (G. McCaskie) are unusual away from San Diego Bay. Horned Grebes are most numerous from November to March, with small numbers remaining into April. Extreme dates are 28 October (1975, four along the Silver Strand, B. Cord) and 5 May (1976, one at the San Diego River mouth, J. Dunn), except for a very late bird on San Diego Bay on 25 May 1957 (AFN 11:376, 1957). The 30 reported near Oceanside on 13 September 1958 (AFN 13:62, 1959) must have been misidentified Eared Grebes. The species has been noted twice in summer: one on San Diego Bay on 4 June 1967, and one on Mission Bay 11–18 July 1967 (G. McCaskie).

Horned Grebes occur very rarely on inland lakes, with four reports: San Diego River north of Grantville, one from 1 to 9 January 1975 (J. Dunn); Lake Henshaw, two on 7 March 1978 (D. Povey); same locality, one from 20 to 26 February 1979 (AB 33:312, 1979); and Lake Cuyamaca, two on 1 March 1980 (AB 34:815, 1980).

RED-NECKED GREBE

Podiceps grisegena (Boddaert)

Casual winter visitor. Of the several sight records, only two are of birds which were undoubtedly correctly identified: one at Sweetwater Reservoir from 20 December 1969 to 2 January 1970 (AFN 24:538, 1970), and one at the south end of San Diego Bay on 14 March 1977 (AB 31:372, 1977). Other reports including birds seen on San Diego Christmas Bird Counts in 1955, 1956, 1958, 1960, 1961, and 1968, those reported in AFN 10:281, 1956; 11:28, 1957; 12:305, 1958; and AB 29:120, 1975, and by Stott (1959a) must largely or entirely be of misidentified Horned Grebes.

Subspecies: No specimens, but undoubtedly *P. g. holboellii* Reinhardt, the only race occurring in North America.

EARED GREBE

Podiceps nigricollis californicus Heermann

Common to abundant migrant and winter visitor, rare in summer; breeds sporadically. Eared Grebes occur on bays, lagoons, estuaries, and lakes throughout the coastal slope of San Diego County. The largest numbers are found on south San Diego Bay, where hundreds congregate in the salt works (952 on 20 December 1980, M. Evans). The species is generally common to very common on other bodies of water, with up to 75 at the Santa Margarita River

mouth on 1 January 1979 (E. Copper) and 100 on Lake Henshaw on 1 April 1978 (P. Unitt). It occurs uncommonly on the open ocean during migration. Fall migrants begin arriving in mid-September, with an early date of 13 September (1975, two on the ocean off San Diego, G. McCaskie). In spring, most or all migrant Eared Grebes have left by 10 May, but determination of departure dates is difficult because small numbers remain into summer. Examples of summer records are five on San Diego Bay on 11 July 1976 (G. McCaskie), up to 10 at the San Dieguito River mouth from 29 June to 5 September 1977 (P. Unitt), and one at Sweetwater Reservoir on 14 August 1929 (SD 11587).

Eared Grebes are known to have nested five times on lakes and lagoons with dense fringing vegetation. Sharp (1907) found a nest with 7 eggs at San Pasqual on 22 April 1906; Willett (1933) reported that F. Stephens found 7 nests with eggs at Lake Cuyamaca on 22 July 1920, and that J. Dixon noted 12 to 15 pairs "starting to lay eggs" at Lake Hodges on 26 June 1930; G. McCaskie saw an adult with a downy chick at San Elijo Lagoon on 28 July 1968 (AFN 22:647, 1968). P. Unitt and R. A. Erickson noted a nest with eggs at the Stuart Mesa Ponds near the Santa Margarita River mouth on 18 and 22 August 1978, and two additional broods of chicks on the latter date (AB 32:1207, 1978).

WESTERN GREBE

Aechmophorus occidentalis (Lawrence)

Common to abundant migrant and winter visitor; rare in summer, except on Sweetwater Reservoir, where it breeds and is abundant throughout the year. Western Grebes occur primarily along the coast, on bays and estuaries, and especially on the ocean within two or three kilometers of shore. D. Povey estimated a maximum of 2750 on the ocean between Point Loma and Imperial Beach on 15 December 1979; examples for other coastal areas are 102 off Carlsbad (D. Povey) and 75 at Agua Hedionda Lagoon (J. Bishop) on 31 December 1977, and 239 on east San Diego Bay on 15 December 1979 (A. Helbig). Western Grebes also occur uncommonly to rarely on inland lakes (except Sweetwater); examples are five at Lake Henshaw on 18 March 1978 (G. McCaskie), and one at Lower Otay Lake on 26 November 1978 (P. Unitt). The timing of migration in this species is still not well known; fall migrants arrive by mid-October (five off Point Loma on 14 October 1978), and spring migrants depart mainly by early May. Small numbers remain until late May (two at the Santa Margarita River mouth on 22 May 1978; six at Mission Bay on 24 May 1978, P. Unitt). A few non-breeding birds regularly remain through the summer along the coast, such as one at Mission Bay on 16 September 1921 (SD 2560), one at La Jolla on 4 July 1977, and one on San Diego Bay from 14 June to 4 July 1978 (P. Unitt).

Breeding Western Grebes are restricted to Sweetwater Reservoir, where nests were first reported in May 1956 (AFN

10:409-410, 1956). Lee (1967) recorded a downy chick and courtship display on 25 February 1966, and subsequent observations indicate that breeding activity continues nearly, if not entirely, throughout the year. Both courtship display and chicks have been seen in every month from February to August, and in October. Up to 40 breeding pairs have been recorded, as in 1968 (AFN 22:647, 1968), and often considerably greater numbers of individuals are present, such as 300 on 28 October 1978 (P. Unitt).

Ratti (1979, 1981) has indicated recently that the two color phases of Western Grebe are reproductively isolated species. The dark-phase birds are Western Grebes (*A. occidentalis*), while the light-phase birds are Clark's Grebes (*A. clarkii* [Lawrence]). Very little information is yet available on the differences in distribution and abundance between these two populations. In January 1977, Ratti (1981) counted 67 Westerns and no Clark's at Quivira Basin in Mission Bay, 29 Westerns and six Clark's in the San Diego River mouth flood control channel, 184 Westerns and 10 Clark's at Harbor Island in San Diego Bay, and nine Westerns and 27 Clark's along the Silver Strand. The identity of the birds nesting at Sweetwater Reservoir remains to be investigated.

Tropicbirds

Family Phaethontidae

RED-BILLED TROPICBIRD

Phaethon aethereus mesonauta Peters

Rare visitor in late summer and early fall, casual in spring. Red-billed Tropicbirds usually occur far out to sea, and are seen especially frequently near the south end of San Clemente Island, but have been recorded as close to shore as 8 km (5 miles) west of Point Loma (one on 3 October 1937, Sefton 1938; one on 22 and 29 September 1940, Abbott 1941). Usually only one or two individuals are observed per day, but maxima of nine and six were counted on 27 July 1968 (AFN 22:647, 1968) and 10 September 1977 (AB 32:256, 1978) respectively. Most records are for September, because of the regularly scheduled Western Field Ornithologists pelagic trips conducted during that month. The earliest dates recorded for Red-billed Tropicbird in San Diego County are "late July" (1958, one near San Clemente Island, AFN 12:436, 1958) and 27 July 1968, cited above), except for the two spring observations: one 16 km (10 miles) west of Imperial Beach on 10 May 1969 (AFN 23:625, 1969), and another 97 km (60 miles) off San Diego on 30 May 1971 (AB 25:800, 1971). The reports for 29 September and 3 October mentioned above are the latest in fall. One collected 8 km (5 miles) south of San Clemente Island on 27 July 1968 (SD 36751) is the only specimen for the county.

Frigatebirds

Family Fregatidae

MAGNIFICENT FRIGATEBIRD

Fregata magnificens Mathews

Rare visitor from midsummer to early fall. Magnificent Frigatebirds occur along the coast, over the ocean within sight of land, and near lagoons and estuaries within a couple of kilometers of the beach. There are also four inland records: one at Rancho Bernardo on 16 July 1978 (AB 32:1207, 1978), five at Lake Cuyamaca on 2 August 1979, one at Lake Henshaw on 5 September 1979, and one at Lake Hodges on 7 September 1979 (AB 34:200, 1980). Normally only one or two individuals are seen at a time; five in the Tijuana River Valley on 20 July 1979 (AB 33:896, 1979) and the five at Lake Cuyamaca are exceptional. Most of the over 80 frigatebirds reported from San Diego County have been seen from early July to early September; there are also five reports for late June and three for mid-September. Extreme dates are 23 June (1979, one at San Diego Bay, AB 33:896, 1979) and 15 September (1971, one at La Jolla, AB 26:120, 1972), with a very late individual on 1 October 1977 at the Silver Strand (AB 32:256, 1978). Almost all frigatebirds reaching San Diego County are immature; adult females have been noted three times, adult males twice. Two specimens have been preserved, one collected 2.5 km (1.5 miles) southwest of Point Loma on 27 June 1927 (Abbott 1927), mounted and on display in SD, and another taken 1.6 km (1 mile) off La Jolla on 28 July 1938 (Kenyon 1937).

Subspecies: Three races were formerly recognized, but the species is now usually considered monotypic.

Cormorants and Anhingas

Family Phalacrocoracidae

DOUBLE-CRESTED CORMORANT

Phalacrocorax auritus albociliatus Ridgway

Common to very common non-breeding visitor. Double-crested Cormorants are most common on bays, lagoons and estuaries along the coast. The largest numbers are found at the mouth of the San Diego River, where several hundred roost on power lines, and at the south end of San Diego Bay (up to 497 on 15 December 1979, M. Evans). The species is rare on the open ocean, though birds breeding on the Channel Islands and Los Coronados Islands (where now reduced to a few pairs, Jehl 1977) undoubtedly disperse to the coast. It is uncommon at most lakes in the coastal lowland, but common at a few: Lake Hodges (25 on 30 November 1978), Santee Lakes (40 on 26 November 1977, P. Unitt) and Sweetwater Reservoir (40 on 15 December 1979, D. Parker). It is now rare on lakes farther

inland (one at Lake Henshaw on 18 March 1978, P. Unitt). The scanty information available on seasonal fluctuations in abundance suggests an increase in numbers in late August and early September, and a decrease in April, but the species nevertheless occurs commonly at favorable localities throughout the summer.

Double-crested Cormorant formerly nested at Lake Henshaw. J. B. Dixon's report (in Willett 1933) that it bred "pleasantly" there, and two sets of eggs taken 30 May 1928 and 15 May 1932 (WF 28652 and 2271), comprise all that is known of the species' brief breeding career in San Diego County. The frequently cited record of nesting at La Jolla is based only on the single sentence "Mr. Partin reported seeing nesting Farallon Cormorants at La Jolla" (Michener 1931). As subsequent accounts (Michael 1935a, Williams 1942) mention only Brandt's Cormorants nesting there, it is likely Partin made a misidentification.

BRANDT'S CORMORANT

Phalacrocorax penicillatus (Brandt)

Very common to abundant throughout the year as a non-breeding bird; nests sporadically at La Jolla. Brandt's Cormorants roost in large numbers on cliffs at La Jolla and Point Loma, and may be seen abundantly on the nearby ocean: 535 at Point Loma on 18 December 1976, C. Edwards; 400 up to 10 km (6 miles) off La Jolla on 19 April 1978, D. Povey. The species is less numerous farther offshore, but is the only cormorant normally present beyond sight of land. It is at best fairly common off the coast of northern San Diego County (14 on 1 January 1977, AB 31:869, 1978). It is rare inside San Diego Bay (three at Shelter Island on 31 January 1975, J. Dunn), and never occurs on fresh or brackish water. No information is available on seasonal variations, if any, in the species' abundance.

Michael (1935a) reported a colony nesting on cliffs at La Jolla in the winter and spring of 1933–1934. On 21 December, the birds were beginning to build nests, while on 6 April there were "still many nests in all stages of development from eggs to full-grown young." On 12 April, "some few birds were just laying the foundations of their nests." Williams (1942) studied the breeding behavior of the Brandt's Cormorants at this colony. Nothing further was noted about the colony, and it may have been inactive for many years until 1980, when W. T. Everett saw three active nests. A small chick was first seen in one nest on 26 June, and three young fledged from two other nests on 10 September. The possibility of Brandt's Cormorants nesting on secluded cliffs at Point Loma has never been investigated.

PELAGIC CORMORANT

Phalacrocorax pelagicus resplendens Audubon

Fairly common to common winter visitor, casual in summer. Pelagic Cormorants occur primarily along the rocky

shorelines of La Jolla and Point Loma, roosting on cliffs and foraging in the surf. Exceptionally high numbers are 76 at Point Loma on 18 December 1976 (C. Edwards) and 40 there on 31 January 1978; more typical are 15 at Point Loma on 3 April 1978 (P. Unitt) and 10 at La Jolla on 2 March 1976 (J. Dunn). The species has been reported once inside San Diego Bay (one at Shelter Island on 15 December 1976, A. Fries) and once at Oceanside (one on 31 December 1975, B. Ford). In spite of its name, the Pelagic Cormorant does not occur far from shore off San Diego County. Extreme dates are 10 October (1926, one off Point Loma, SD 11251) and 7 May (1976, one at Point Loma, J. Dunn). Summer stragglers have been observed twice, at Point Loma on 31 July 1964 and at the Imperial Beach pier on 20 July 1979 (G. McCaskie).

ANHINGA

Anhinga anhinga (Linnaeus)

Accidental, one record. One was at Sweetwater Reservoir from 4 February 1977 continuously through the fall of 1980 (AB 31:373, 1977; photographs in SD.)

Subspecies: No specimen, but presumably *A. a. leucogaster* (Vieillot) which breeds from Sinaloa and the southeastern United States south to Panamá, and has reached Arizona as an accidental.

Boobies

Family Sulidae

BLUE-FOOTED BOOBY

Sula nebouxi *nebouxi* Milne-Edwards

Very rare fall vagrant, accidental in winter. Seven records between 18 August and 4 October: at sea off San Diego, 4 October 1964 (AFN 19:78, 1965); Lake Hodges, 8 September 1969 (SD 37566, wing only preserved); Point Loma, 3 September 1969 (AFN 24:97, 1970); off Imperial Beach, 6 September 1971 (AB 26:119, 1972); Lake San Marcos, late August to 14 December 1972, when found dead (AB 27:120, 1973); Lake Henshaw, 18 August 1977; and off Point Loma, 26 August 1977 (AB 32:256, 1978). The exceptional later record is of one seen off Oceanside on 26 March 1980 (AB 34:814, 1981). The years 1969, 1971, 1972, and 1977 were all years of Blue-footed Booby invasions to the Salton Sea. Of significance just outside San Diego County were 18 at Los Coronados Islands on 20 August 1971, and 38 there on 21 November (AB 26:119, 1972). A worn and soiled specimen from San Diego on 28 January 1936 (SD 17171) was probably an escapee from the zoo.

BLUE-FACED BOOBY

Sula dactylatra Lesson subsp.?

Accidental, one record (the only one for California): one adult seen 35 km (22 miles) southwest of the south end

of San Clemente Island on 10 January 1977 (Lewis and Tyler 1978).

Subspecies: Not determinable in absence of a specimen. *S. d. californica* Rothschild breeds on islands off Mexico. *S. d. personata* Gould on islands in the western and central Pacific.

Pelicans

Family *Pelecanidae*

AMERICAN WHITE PELICAN

Pelecanus erythrorhynchos Gmelin

Rare migrant and winter visitor. White Pelicans occur on lagoons, bays, estuaries, and fresh-water ponds along the coast. A few are reported almost every year; some of the larger numbers are seven at Buena Vista Lagoon on 10 October 1969, five at Batiquitos Lagoon on 14 February 1978 (A. Fries), 20 at the south end of San Diego Bay on 30 January 1976 (J. Dunn), and six in the Tijuana River Valley, 15–16 November 1978 (P. Unitt). During spring migration, the species also occurs on inland lakes, particularly Lake Henshaw. Some inland spring records are 10 at Sweetwater Reservoir on 19 March 1977, 20 at Lake Henshaw on 9 March 1973 (G. McCaskie), and 17 there on 5 March 1978 (D. Povey). Very rarely flocks have been seen migrating over the Anza-Borrego Desert, with four reports for March (maximum 200 at Font's Point on 20 March 1957) and one for September (1962, 75 at Culp Valley, ABDSP file). White Pelicans are very rare inland in winter: one at Otay Lake on 12 December 1976 (SD 40209), and one at Lake Henshaw on 29 January 1977 (J. Dunn).

The earliest recorded fall dates for San Diego County are 2 September (1968, one at Buena Vista Lagoon, A. Fries) and 15 September (1962, one on south San Diego Bay, G. McCaskie), but the species does not occur regularly until mid-October. Fall migration continues at least to mid-November. Spring migration is certainly underway by early March, as indicated by the inland records cited above. Departure of spring migrants is usually completed by late April; the latest dates are 2 May (1975, 15 on south San Diego Bay) and 15 May (1971, 10 at the same locality, J. Dunn).

No definite nesting or summer records have been published but Willett (1933) wrote "J. B. Dixon (MS) finds it occurring frequently at Lake Henshaw and believes that it would nest there if not persecuted by fishermen. He has found several eggs dropped by the birds along the shores of the lake."

BROWN PELICAN

Pelecanus occidentalis californicus Ridgway

Common to very common non-breeding visitor. Brown Pelicans occur on coastal salt water and on the open ocean, most numerous within a few kilometers of shore. They are found along the coast of San Diego County throughout

the year, but possible seasonal variations in abundance or the ratio between adults and immatures have not been studied. Recent high counts are 279 at Point Loma on 15 December 1979 (C. Edwards) and 221 on the ocean between Point Loma and Imperial Beach on 20 December 1980 (D. Povey). Unfortunately, no numerical data are available to document historical changes in the numbers of Brown Pelicans on the coast of San Diego County, but the reproductive failures of the birds nesting on the Channel and Los Coronados Islands caused by DDT contamination in the 1960s and early 1970s are well known.

The statement by Sams and Stott (1959) that the Brown Pelican "breeds...sometimes on secluded mainland coast (La Jolla)" is not based on any factual evidence.

The Brown Pelican is a very rare vagrant inland in late summer, with seven records of single individuals: Pauma Valley, 6 September 1948 (E. Beemer); Lake Hodges, 31 August 1967 (A. Fries); Lake Cuyamaca, 29 July – 3 August 1978 (AB 32:1207, 1978) and 2 August 1981 (M. Evans); Rancho Bernardo, 25 August 1979 (AB 34:200, 1980); Agua Caliente Springs, 8 August 1971; and Borrego Valley, 23 September 1976 (ABDSP file).

Herons

Family *Ardeidae*

GREAT BLUE HERON

Ardea herodias herodias Linnaeus

Fairly common to common throughout the year as a non-breeding visitor, also nesting in small numbers at a few localities. Great Blue Herons may be seen around bays, lagoons, ponds, and lakes throughout San Diego County, most numerous at the lagoons and large inland lakes (35 at Batiquitos Lagoon on 18 and 20 August 1978, P. Unitt; 30 at Lake Henshaw on 5 November 1978, G. McCaskie). They occur as high as Lake Cuyamaca in both winter and summer (one on 21 January 1978, four on 29 July 1978, P. Unitt). In the Anza-Borrego Desert the species is a very rare migrant, with three reports in March and April, and six from early July to early October (ABDSP file; Borrego Springs, July 1971, SD 37988). The little information available on seasonal movements or fluctuations in abundance suggests that an influx of post-breeding birds or of fall migrants occurs during August.

Only three nesting colonies are known to have been active in recent years. Near Rancho Santa Fe, in the San Dieguito River Valley adjacent to the Whispering Palms Golf Course, five pairs nested in 1977 (M. F. Platter Rieger), three in 1980 (P. Unitt). At Point Loma, near the east shore, 2.4–3.2 km (1.5–2 miles) north of the tip of the point, 13–15 pairs nested in 1972 (R. Thowless), 25 in 1977, and 24 in 1978 (M. F. Platter Rieger). At Lake Henshaw, at least 15 pairs nested in 1972 (T. Scott). Additionally, isolated single pairs nested at Sutherland Reservoir in 1974 (W. Weisser), in a Torrey pine in Del Mar in 1979 (M. Kelley), and in

a residential neighborhood at Crown Point near Mission Bay in 1981 (D. Herron). Older recorded breeding localities are "near San Diego," nests on 24 April 1862 (Cooper 1880); San Onofre, "two small colonies" in late March 1905 (Willett 1912), about 15 pairs on 30 March 1919 (Willett 1933), and one set of eggs collected on 19 March 1895; "Sycamore Canyon" in Camp Pendleton, eggs taken on 6 March 1920; "huge sandstone cliffs north of Del Mar," eggs taken on 3 April 1921; and Occaside, eggs taken on 2 April 1921 and 18 March 1923 (WF). In San Diego County, Great Blue Herons usually place their nests high in tall eucalyptus or sycamore trees.

Subspecies: *A. h. herodias* is the form resident in San Diego County (*A. h. hyperonca* Oberholser being a synonym, Phillips et al. 1964). Oberholser (1912) reported a specimen of the race *A. h. treganzai* Court, which breeds in the Great Basin, Rocky Mountain, and southwestern desert regions, collected at present Border Field on 16 July 1894. However, Payne (in Mayr and Cottrell 1979) considers *treganzai* a synonym of nominate *herodias* as well.

GREAT EGRET

Ardea alba egretta Gmelin

Fairly common winter visitor, rare to uncommon in summer. Great Egrets visit lagoons, bays, and estuaries along the coast, and ponds and lakes in the coastal lowland (east to Pauma Valley and Lake Hodges). Some typical numbers and localities are 15 at Batiquitos Lagoon on 6 October 1978, five at Lake Hodges on 30 November 1978, and 10 at Santee Lakes on 28 January 1978 (P. Unitt). Grinnell and Miller (1944) mention observations at Cuyamaca State Park on 9 March and 10 September (year?), the only report of the species in the foothill or mountain zones. The Great Egret is a casual migrant through the Anza-Borrego Desert, with three reports from March to May and one in September (1960, two at Tamarisk Grove Campground, ABDSP file).

More information is needed on the timing of the seasonal variations in the abundance of the Great Egret, but it is clear that the species is most numerous in winter, least numerous in summer. Sefton (1936), in reporting on a large roost at Point Loma, observed the largest numbers from December to March, with a maximum of "well over 150" on 25 February 1936; there were "45 evenings during the summer when no egrets came." No Great Egrets were found along the coast of San Diego County between 25 April and 18 August in 1978, but one at San Elijo Lagoon 4 June - 3 July 1977, one at Buena Vista Lagoon on 29 June 1977 (P. Unitt), one at San Elijo Lagoon on 2 June 1974, and three there on 6 July 1975 (SEL surv.) indicate the species may remain in small numbers through the summer, at least around the lagoons of northern San Diego County.

Historic changes in the abundance of Great Egrets were not so pronounced as those of Snowy Egrets, but the former also declined seriously during the plume hunting era. Willett (1912) wrote "thirty or forty years ago this beautiful bird

was a common winter resident of southern California... at present time it is seldom met with in this locality, and never seen in great numbers." Recovery had started by 1912, however, as Grey (1913b) reported four sightings in that year, of up to 20 at the south end of San Diego Bay on 25 December. His statement "on previous years I never saw more than four at any one time" implies that the Great Egret never completely disappeared from San Diego County, as did the Snowy Egret. By 1936 it had probably recovered fully, as suggested by Sefton's large roost at Point Loma.

REDDISH EGRET

Egretta rufescens (Gmelin) subsp.?

Very rare visitor in fall and winter, casual in spring and summer. Reddish Egrets occur primarily in salt marshes and on tidal mudflats in the estuary of the Tijuana River, around south San Diego Bay, and at the San Diego River mouth. They are usually seen singly; two individuals have been seen together on a very few occasions; the maximum is three at the Tijuana River mouth on 16 October 1977, with at least four individuals in the San Diego area that fall (AB 32:256, 1978). The species has also occurred at Mission Bay (11 January and 15-20 February 1978, D. Povey and P. Unitt), Los Peñasquitos Lagoon (one to two from 2 September to 16 November 1968), San Elijo Lagoon (11-18 September 1962, AFN 17:67, 1963; 29 September 1968, AFN 23: 107, 1969), and the Santa Margarita River mouth (17 April - 13 May 1981, L. Salata). Reports of one at Otay Lake on 20 September 1943 (K. Stott, in Huey 1944) and of one white phase individual at Mission Bay on 19 April 1958 (AFN 12:385, 1958) are probably in error. The only specimen for the county is an immature collected at Imperial Beach on 23 October 1963 (SD 30757, McCaskie 1964).

Reddish Egrets have been observed in San Diego County in every month of the year, but there is a definite peak of occurrences from October to December. These fall visitors sometimes arrive in September, and there are five reports of arrival in July or August; the earliest are one at the south end of San Diego Bay on 16 July 1978 (AB 32:1207, 1978) and another at the San Diego River mouth on 17 July 1981 (J. Coatsworth). Some individuals remain through winter and into spring: one at south San Diego Bay 19 September 1972 - 31 March 1973 (AB 27:663, 1973); one at the Tijuana River mouth 6 October 1973 - 3 April 1974 (AB 28:851, 1974). One found at the San Diego River mouth on 8 October 1977 remained through the following summer, to 8 September 1978 (AB 33:213, 1979). While fall Reddish Egrets are invariably immature, the four spring arrival records are mostly of adults: one adult and one immature at south San Diego Bay, 5 May - 27 June 1962 (McCaskie 1964), one adult at the same locality, 15-16 April 1972 (AB 26:808, 1972), one adult at the same locality, 24 April - 14 May 1977 (AB 31:1046, 1977), and one subadult at the Santa Margarita River mouth (cited

above). The species is irregular in occurrence from year to year; several individuals were observed in 1962 and 1963, and in 1977 and 1978, but it went unreported from 1964 to 1967, and in 1975 and 1976.

Subspecies: Visitors to California have always been listed as *E. r. dickeyi* van Rossem. However, *E. r. dickeyi* was originally distinguished from nominate *E. r. rufescens* by differences in the adult plumage only. No comparison of the immature plumages has yet been published.

LOUISIANA HERON

Egretta tricolor ruficollis Gosse

Rare winter visitor; casual in summer. Louisiana Herons occur annually in tidal salt marshes in the Tijuana River estuary and around south San Diego Bay. Usually only one or two individuals are found in each area, but a maximum of four was recorded at the Tijuana River mouth on 28 February 1965 (AFN 19:416, 1965), and five were in the San Diego area as a whole during the winter 1979–80 (AB 34:306, 1981). Single birds occasionally visit the San Diego River mouth, as on 27 October 1963 (McCaskie 1964) and 15 November 1969 (AFN 24:98, 1970). The species was regular on Mission Bay prior to the destruction of most of the salt marsh habitat there in the late 1950s, but the only observation at that locality since 1956 is of one on 14 February 1970 (G. McCaskie). It is now very rare around the lagoons of northern San Diego County (one at Los Peñasquitos Lagoon, January–February 1972, AB 26:654, 1972; one at the Santa Margarita River mouth, 27 March – 1 May 1972, A. Fries), but was more frequent in that area during the 1960s (maximum of six at San Elijo Lagoon, 1 November – 27 December 1963, McCaskie 1964). Single Louisiana Herons have also been noted three times at freshwater ponds in the Tijuana River Valley: 17 December 1967, 5 October 1968 (G. McCaskie), and 12–17 December 1977 (E. Copper).

Louisiana Herons occur principally from October to April. Early dates are 23 September (1978, one at San Diego, AB 33:213, 1979) and 27 September (1975, one at Los Peñasquitos Lagoon, R. Higson); late dates are 7 May (1958, one at Buena Vista Lagoon, AFN 12:385, 1958) and 9 May (1981, one at south San Diego Bay, E. A. Cardiff). There are also six reports of single birds in late spring and summer: Los Peñasquitos Lagoon, 1 June 1977 (AB 31:1047, 1977); one at San Elijo Lagoon, 5 June 1977 (probably the same individual, J. DeBeer); south San Diego Bay, 31 July – 11 September 1977 (AB 31:1188, 1977 and 32:256, 1978); same locality, 31 May 1978 (AB 32:1054, 1978); same locality, 29 May 1979 (AB 33:805, 1979); Tijuana River mouth, 23 June – 6 July 1979 (AB 33:896, 1979).

CATTLE EGRET

Egretta ibis ibis (Linnaeus)

Fairly common to common visitor year-round, increasing. Nesting colonies recently established at Buena Vista Lagoon

and in the Tijuana River Valley. The Cattle Egret was first documented for California and San Diego County on 7 March 1964, when one was collected of two seen in the Tijuana River Valley (SD 35075, McCaskie 1965). The species increased gradually during the next 13 years: 10 in the Tijuana R. Valley on 5 November 1966 (AFN 21:76–77, 1967) was the largest group reported in the 1960s, while 35 in the same area on 14 April 1973 (AB 27:819, 1973) was the maximum until 1977. During the period 1964–1977, Cattle Egrets occurred primarily from September to April, and are still most widespread at that season. Extreme dates then were 25 August (1971, one in the Tijuana River Valley, AB 26:120, 1972) and 24 May (1967, one at the same locality, AFN 21:540, 1967). In the fall of 1977, a large influx arrived, and substantial numbers remained through the summer of 1978 (35 in the Tijuana River Valley on 2 July, D. Herron; 55 at Lake Hodges on 2 September, G. McCaskie). Breeding in San Diego County was first noted in summer 1979, when about 100 pairs nested at Buena Vista Lagoon (AB 33:896, 1979). A second colony established itself in summer 1980, with at least 20 pairs nesting in the flooded swamp in the Tijuana River bed just west of Dairy Mart Road (AB 34:929, 1980).

Cattle Egrets forage around pastures, agricultural fields, and fresh water ponds, and roost and nest in dense marsh vegetation. Some large numbers of non-breeding birds in recent years are 200 in the Tijuana River Valley on 16 December 1978 (G. McCaskie), 150 in the Twin Oaks Valley on 9 March 1978 (A. Fries), and 950 at Buena Vista Lagoon on 22 December 1979 (E. J. McNeil). They were not reported in San Diego County away from the coastal lowland until 1981: one at Horse Camp in Coyote Creek Canyon in May (A. Morley); two in Earthquake Valley on 27 November; 12 at Agua Caliente Springs on 28 November (M. Evans). A bird color-marked from a nesting colony at the Salton Sea was seen at Otay on 15 November 1975 (AB 30:125, 1976).

LITTLE BLUE HERON

Egretta caerulea (Linnaeus)

Very rare fall and winter visitor, very rare but increasing summer visitor, with two records of breeding. Single immature Little Blue Herons have been noted ten times along the coast of San Diego County between 27 August (1976, Batiqitos Lagoon, AB 31:222, 1977) and 17 March (1981, Mission Bay, G. McCaskie). Three reports are from the Santa Margarita River mouth area, one from the San Luis Rey River mouth, one from Buena Vista Lagoon, two from Batiqitos Lagoon, one from Mission Bay, and two from the Tijuana River Valley, where the only specimen for the county was collected on 4 October 1969 (SBCM 4419). One reported at San Diego on 19 March 1967 (Hubbs 1968) was probably misidentified.

In contrast, all of the seven summer records are of adults. These are one at the Santa Margarita River mouth, 12–13

June 1972 (AB 26:904, 1972), one at San Elijo Lagoon, 19 June 1977 (AB 31:1188, 1977), one at the Tijuana River mouth, 8-9 June 1979, one at Batiquitos Lagoon, 12-24 June 1979 (AB 33:396, 1979), and one at San Diego, 25 August 1979 (AB 34:200, 1980). A pair of Little Blue Herons nested in the egret colony near Dairy Mart Road in the Tijuana River Valley 23 May - 16 August 1980 and raised two young (AB 34:815 and 929, 1980). In 1981 a pair fledged three chicks on 1 August, and two of the juvenals remained until 31 August (G. McCaskie). For a summary of the species' status in California prior to its colonization of the state, see Unitt (1977).

Subspecies: Two races were formerly recognized, but Parkes (1955) showed that the species does not vary geographically.

SNOWY EGRET

Egretta thula thula (Molina)

Common to very common winter visitor, generally uncommon to fairly common in summer, nesting colonies recently established at Buena Vista Lagoon and in the Tijuana River Valley. Snowy Egrets frequent a wide variety of aquatic habitats: margins of lagoons, bays, and estuaries, rocky tidepools, and freshwater ponds and lakes in the coastal lowland. The species has been reported once in the mountains: one seen "at a pond on the east side" of the Cuyamaca Mountains in the spring of 1862 (Cooper 1874). There are three reports for the Borrego Valley, of single birds on 8 May 1975 and 18 April 1976, and five on 22 October 1981 (ABDSP file).

Snowy Egrets are found in San Diego County throughout the year, but little is known of their seasonal cycle. Limited evidence suggests a fall influx beginning in July, with the maximum numbers occurring in October and November: at San Elijo Lagoon, 230 on 1 November 1963, 200 on 23 October 1964 (G. McCaskie), and 104 on 24 October 1974 (A. Fries). The species is least numerous during June, but fair numbers may still be found then even away from nesting colonies: 11 at the Santa Margarita River mouth on 3 June 1972 (A. Fries), six at San Elijo Lagoon on 1 June 1974 (SEL surv.).

J. P. Rieger discovered the first county Snowy Egret nests in summer 1979 when about 125 pairs colonized Buena Vista Lagoon (AB 33:896, 1979). In summer 1980, at least three pairs nested in the swamp west of Dairy Mart Road in the Tijuana River Valley (AB 34:929, 1980), and about 20 pairs nested there the following year.

The Snowy Egret experienced great changes in status between 1870 and 1940. Although J. G. Cooper "found it plentiful at all seasons" along the coast of southern California during the 1860's, hunting for hat plumes eliminated it from this area by 1890. The species was not reported again from San Diego County until 1929, after plume hunting had ended. Recovery proceeded rapidly; there has been no evidence of a major change in abundance since 1940.

Subspecies: A. M. Rea (1983) has recently determined that Snowy Egrets from all parts of the United States (except possibly some from the Salton Sea) are similar in size, and should be considered one subspecies, and that the larger *E. t. brewsteri* Thayer and Bangs is restricted to Baja California and the Gulf of California. Certainly the two study skins from San Diego County in SD, collected on 10 January and 1 April, are too small for *brewsteri* as traditionally listed. However, other species of herons regularly disperse from Baja California north to southern California, and the identity of the local breeding birds is not yet known.

GREEN HERON

Ardeola striata anthonyi (Mearns)

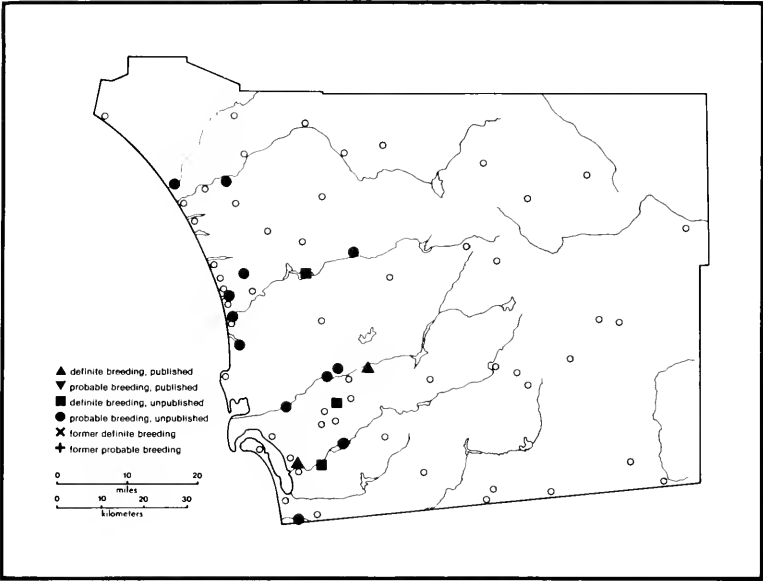
Uncommon to fairly common resident. Green Herons prefer riparian woodland and the margins of brackish lagoons or fresh-water lakes and ponds. They rarely visit tidal salt marshes. For nest sites, they use primarily willow trees. Egg dates (9): 5 May - 27 June. The species is most numerous around rivers and lakes in the coastal lowland (up to nine on the San Luis Rey River near Bonsall on 1 January 1979, J. Dunn; 10 at Santee Lakes on 26 November 1977, P. Unitt), and all known breeding localities are in this zone. Green Herons occur rarely farther inland during migration or post-breeding dispersal: Lake Cuyamaca, 24 April and 5 May (year?, Grinnell and Miller 1944); San Felipe Valley, 3 May 1896 (SD 133); Lake Henshaw, 27 July 1949 (E. Beemer); Jacumba, one on 20 April 1976 (G. McCaskie); Hellhole Canyon, one on 13 May 1979 (A. Morley); Coyote Creek Canyon, four reports from March to June (ABDSP file). Though the species is not sedentary, it is present in the county throughout the year, with no conspicuous seasonal fluctuations in abundance. Earlier in this century, however, it was very rare in winter, as implied by Huey (1928) in reporting one at Lindo Lake on 1 January 1928. Interestingly, Phillips et al. (1964) report an increase in the numbers of Green Herons wintering in Arizona about 1942; perhaps a similar change in status occurred in southern California about the same time.

YELLOW-CROWNED NIGHT HERON

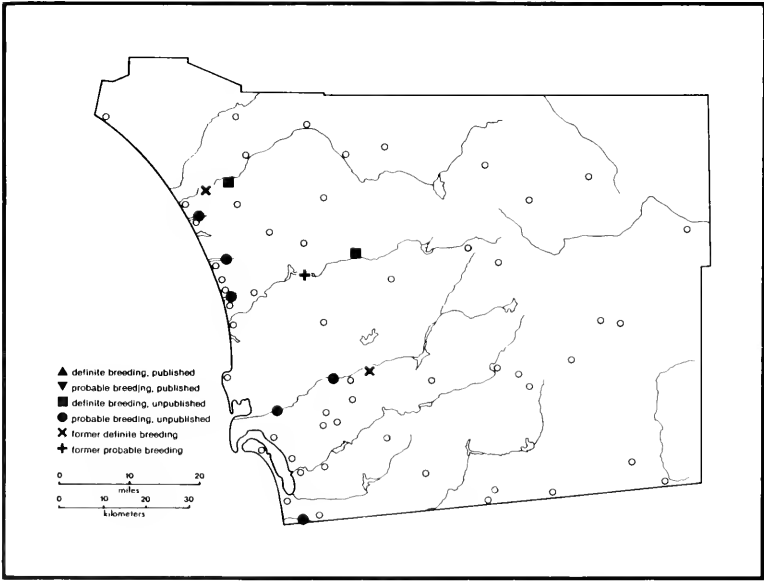
Nycticorax violaceus bancrofti (Huey)

Casual vagrant, few records of adults: Tijuana River mouth, 3 November 1962; same locality, 22-25 October 1963 (McCaskie 1964), grounds of Sea World, Mission Bay, 3 April 1979; Tijuana River Valley, 15 April - 2 May 1979 (AB 33:805, 1979), and south end of San Diego Bay, 18-26 July 1980 (AB 34:929, 1980). The bird found in 1963 was collected (SD 30758), and all three seen in 1979 and 1980 were photographed. Also, a probable immature was noted at Solana Beach, 1-11 November 1963 (McCaskie 1964). For a summary of California records, see Hocchlin (1978).

Subspecies: The San Diego specimen's subspecific identity needs critical attention because Yellow-crowned Night Herons could reach California either by wandering north



MAP 2. Breeding Distribution of Green Heron (*Ardeola striata*)



MAP 3. Breeding Distribution of Least Bittern (*Ixobrychus exilis*)

from Baja California or west from the eastern United States. Thicker bills distinguish *A. v. bancrofti* (Huey), breeding from central Baja California south through western Mexico and in the West Indies, from *A. v. violaceus* (Linnaeus), breeding in the eastern United States (Wetmore 1946). McCaskie and Banks (1966) reported the San Diego specimen as *bancrofti*, and my measurement of the bill (depth at nostril 22.5 mm) supports this identification. The bird's bill is unusually long (exposed culmen 74 mm), however, so that in proportions it resembles the more slender bill of many *violaceus*. To determine whether measurements of bill depth or of the ratio between length and depth better distinguish the two races, I measured six *violaceus* and eight *bancrofti* in MVZ. While the bill length/depth ratios of *violaceus* do average greater than those of *bancrofti*, indicating more slender shape, there is much overlap between the races. However, there is no overlap in bill depth alone. Therefore, I conclude the specimen from San Diego is *bancrofti*. Also, since *bancrofti* average longer-billed than *violaceus*, the unusually long bill suggests *bancrofti*.

BLACK-CROWNED NIGHT HERON

Nycticorax nycticorax hoochii (Gmelin)

Common to very common fall and winter visitor, uncommon to fairly common in spring and summer, but with substantial numbers nesting at a few localities. Black-crowned Night Herons forage around lagoons, estuaries, bayshores, ponds, and lakes, and roost during the midday in groves of trees, which may be quite some distance from water. They occur throughout the coastal lowland, having been found east to Pauma Valley (E. Beemer) and Ramona (25 May 1931, SD 14597), but have not been reported farther inland. Very little information is available on the seasonal movements and fluctuations in numbers of this species, but it is most numerous and widespread from July to March. To what extent this variation is caused by migration as opposed to concentration of birds into local nesting colonies is unknown. Some representative numbers and localities of non-breeding birds are 62 at the Santa Margarita River mouth on 2 August 1971 (A. Fries), 75 at Whalen Lake on 28 December 1980 (G. McCaskie), 44 at San Elijo Lagoon on 2 December 1973 (SEL surv.), 45 at Sweetwater Reservoir on 2 December 1978, and 50 at south San Diego Bay on 6 November 1977 (P. Unitt).

The breeding distribution of the Black-crowned Night Heron is poorly known. Definitely known recent colony sites are at Buena Vista Lagoon (many pairs in 1979, J. P. Rieger), San Diego River 1.6 km east of Old Mission Dam (6–8 pairs in 1980, C. Edwards), Point Loma (157 pairs on 24 March 1978, J. P. Rieger), North Island Naval Air Station (53 pairs on 11 April 1979, P. Jorgensen), and Library and Spreckles parks, Coronado (at least five pairs in 1980, M. Rosenquist). The species nested in Balboa Park during the 1950s (Sams and Stott 1959) and in Imperial Beach during the 1960s (G. McCaskie). WF has three egg

sets collected at Sorrento on 20 April 1934 and 10 May 1935; it is not known if this site is still in use. At Buena Vista Lagoon, the Black-crowned nest in dense marsh vegetation with other herons, at Sorrento and Old Mission Dam in willows, and at other sites in eucalyptus trees. Other colonies probably exist but have not been reported.

LEAST BITTERN

Ixobrychus exilis hesperis Dickey and van Rossem

Rare summer resident, very rare in winter. Least Bitterns are virtually restricted to large brackish and fresh-water marshes in the coastal lowland. They are usually seen singly, with a maximum of four at Buena Vista Lagoon on 30 July 1979 (AB 33:896, 1979). Some other favorable localities are Guajome Lake, Batiquitos Lagoon, San Elijo Lagoon, Mission Valley, and the Tijuana River Valley. The species has been noted exceptionally in salt marsh habitat in fall and winter: one at the San Diego River mouth 17 February 1963; up to two at the Tijuana River mouth 23 October – 2 November 1963 (G. McCaskie). East of the coastal lowland, it has been reported only from Campo Lake (without details) by Sams and Stott (1959).

The Least Bittern is seen so sporadically even at the most favorable localities in summer that it is difficult to determine its migratory habits. Though it has been recorded in San Diego County in every month of the year, it is least frequent from November through February, and has been noted only eight times in December and January.

Though no definite nesting activity has been observed in recent years, small numbers probably still breed in the few extensive marshes. The local breeding population is undoubtedly much smaller now than early in this century, considering the extensive destruction of suitable habitat. Documented nesting localities are San Luis Rey (Sharp 1907), Guajome Lake, and San Pasqual (WF). Egg dates (8), 20 May – 8 July.

AMERICAN BITTERN

Botaurus lentiginosus (Rackett)

Uncommon and localized winter visitor, very rare in summer. American Bitterns occur primarily in brackish and fresh-water marshes along the coast and in the coastal lowland. Usually only a single individual of this secretive species is noticed at one place; high counts are five at the Santa Margarita River mouth on 22 November 1979 (A. Fries), four at San Elijo Lagoon on 4 November 1973 (SEL surv.), and four along the San Luis Rey River in Oceanside on 28 December 1980 (B. Rodstrom and G. Lester). Some other localities where it is frequently observed are Batiquitos Lagoon, Santee Lakes, Sweetwater Reservoir, and along the lower Otay River. It is rare in tidal salt marshes (one at the Tijuana River mouth on 25 October 1973, G. McCaskie; one at the south end of the Silver Strand on 18 December 1976, D. and L. Delancy). The species has been noted only three times east of the coastal lowland: one at Jacumba on 10 April 1976 (G. McCaskie); one at Little Pass

in the Anza-Borrego Desert on 3 October 1975 (ABPSP file); and one at Lower Willows, Coyote Creek Canyon, on 25 April 1981 (A. Morley).

American Bitterns occur principally from late October through early April: 15 September (1949, San Diego, SD 29850) and 2 October (1974, one on Otay Mesa, J. Dunn) are the earliest fall dates, while 25 April (1978, one at Batiqitos Lagoon, P. Unitt) and 29 April (1979, one in the Tijuana River Valley, C. Edwards) are the latest for probable migrants in spring. There are seven definite late spring and summer reports: two at the Santa Margarita River mouth 19 June 1972 (A. Fries); two at Buena Vista Lagoon on 29 August 1961 (AFN 15:492, 1961); one at San Elijo Lagoon on 2 June 1974 (SEL surv.) and another there on 12 July 1981 (E. Copper); one emitting the "pumping" call 1.6 km east of Old Mission Dam on 29 May 1973 (P. Unitt); one seen at the same locality on 5 August 1975 (D. Ramsey); and one at Guajome Lake on 18 June 1981 (C. Edwards).

Storks

Family Ciconiidae

WOOD STORK

Mycteria americana Linnaeus

Now a casual visitor; formerly irregularly common in summer and fall. All recent occurrences have been along or near the coast of northern San Diego County. The last year in which substantial numbers of Wood Storks were reported was 1961, when 14 were at Buena Vista Lagoon on 10 August, and 18 were at San Elijo Lagoon on 29 August (AFN 15:492, 1961). The only observations since 1961 have been of one at San Elijo Lagoon 6–10 August 1963 (AFN 18:73, 1964), one at San Elijo Lagoon 31 July – 2 August 1964 (AFN 18:535, 1964), four at Buena Vista Lagoon on 18 July 1971 (AB 25:905, 1971), one at San Elijo Lagoon 31 July – 3 August 1975 (AB 29:1030, 1975), one at Whalen Lake, 24 August – 8 September 1980 (AB 35:225, 1981), and two at the same locality on 28 December 1980 (G. McCaskie).

Earlier in this century, Wood Storks were much more numerous and widespread, being recorded at many points all along the coast, and on ponds and lakes inland in the coastal lowland. The species was also reported at Lake Henshaw and Lake Cuyamaca in the summer of 1934 (Abbott 1935). The maximum numbers known are "about 100" at Lake Hodges on 11 August 1925, "hundreds" in the Sweetwater River Valley near Dehesa on 30 August 1923 (Abbott 1931), 500 at Agua Hedionda Lagoon from about 1 to 14 August 1938 (Abbott 1938), and 300 at Buena Vista Lagoon during July and August 1953 (Rechnitzer 1954). Such concentrations did not occur annually; Wood Storks even then were noted for their large fluctuations in abundance. July, August, and September were the principal months of occurrence, with earliest dates of "late May"

(1930, 14 in Mission Valley, Abbott 1931) and 10 June (1934, Lake Hodges, Abbott 1935), and latest dates of 6 October (1956, three at Buena Vista Lagoon, AFN 11:59, 1957) and 25 October (1953, one at Buena Vista Lagoon, AFN 8:41, 1954). The species was also reported three times outside this range of dates: two at San Diego from 27 March to 17 April 1918 (Grey 1918b), one in Mission Valley on 14 January 1921 (Grey 1925), and the December record mentioned above.

Ibises and Spoonbills

Family Threskiornithidae

WHITE IBIS

Eudocimus albus (Linnaeus)

Accidental, one record. One immature found at the Sefton estate on Point Loma on 15 November 1935 was collected on 20 November (Huey 1936, SD 17099). White Ibises normally range north to about 27° N in central Baja California.

WHITE-FACED IBIS

Plegadis chihi (Vieillot)

Uncommon migrant and winter visitor, rare in summer. Nested formerly at Guajome Lake, and recently at Buena Vista Lagoon. White-faced Ibises visit fresh-water ponds, irrigated fields, and brackish lagoons along the coast and in the coastal lowland. They occur principally along the coast from Santa Margarita River south to Del Mar, including the San Luis Rey River Valley in Oceanside, and are almost entirely restricted to this area in winter. Some of the larger numbers noted are 36 at Buena Vista Lagoon on 2 October 1976 (A. Fries), 45 in the San Luis Rey River Valley between Oceanside and Bonsall on 1 January 1979 (J. Dunn), and 30 in the same area on 28 December 1980 (K. Campbell). Since 1978, small numbers have also been found regularly in the Tijuana River Valley, with up to 20 on 5 September 1980 (AB 35:225, 1981). The species occurs rarely in salt marshes: Mission Bay, 26 and 28 August 1928 (SD 9982 and 12278); one at south San Diego Bay, 29 September 1963; one at the Tijuana River mouth, 19 March 1966 (G. McCaskie). In the past, it was probably less localized; Holterhoff (1885) reported 20 in Mission Valley on 1 January 1885.

Occasional individuals remain through the summer, so the arrival and departure of migrants is hard to determine. Fall migrants may arrive occasionally in early August (20 at San Elijo Lagoon on 4 August 1974, A. Fries), definitely by late August and early September. Timing of spring departure is poorly known, but wintering birds remain regularly into mid-March, possibly as late as 11 April (1965, one at San Elijo Lagoon, G. McCaskie). Small numbers sometimes occur into summer along the coast of northern San Diego County: one at San Elijo Lagoon on 10 July 1964 (G.

McCaskie); seven at the Santa Margarita River mouth on 22 May 1972 (A. Fries); up to 8 at Batiquitos Lagoon from 16 April to 16 September 1978 (P. Unitt).

The only definite old report of White-faced Ibis breeding in the county is Sharp's (1907) report of "a colony of about a dozen birds...nesting in the tules at Guajome in 1901." Shields (1894) reported a colony of "hundreds," and collected 60 egg sets in the "northern part of San Diego County" on 29 May 1893, but this may have been in what is now Riverside County. On 5 June 1979, J. P. Rieger discovered two nests at Buena Vista Lagoon, saw 13 individual birds, and estimated six pairs to be breeding (AB 33:896, 1979).

ROSEATE SPOONBILL

Platalea ajaja Linnaeus

Accidental, one record. P. Jorgensen saw three at the Santa Margarita River mouth on 24 June 1977. These were probably the same individuals that visited the San Joaquin Marsh in Irvine, Orange County, from 26 June to 4 October 1977 (AB 31:1189, 1977 and 32:256, 1978). An invasion of spoonbills (up to 17 individuals) reached the Salton Sea in June 1977. Spoonbills nest on the west coast of Mexico as far north as Sinaloa, and range north very rarely to southern Arizona and the Salton Sea.

New World Vultures

Family *Cathartidae*

TURKEY VULTURE

Cathartes aura (Linnaeus) subsp.?

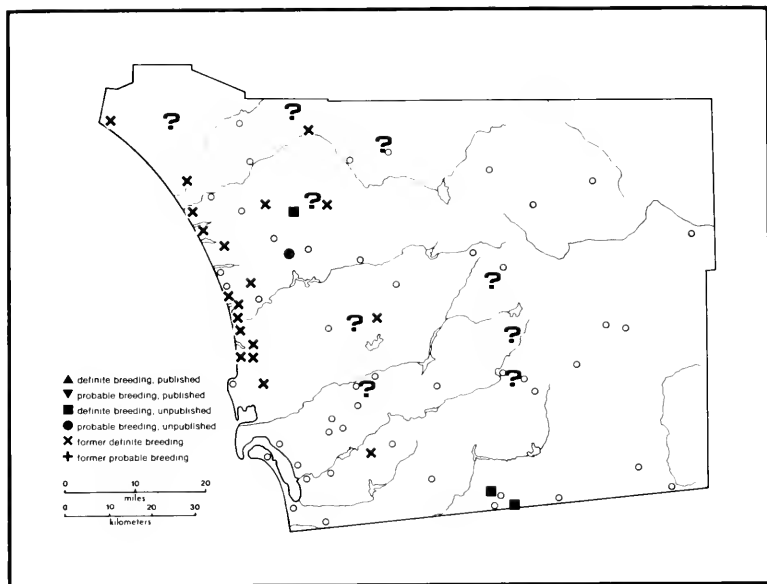
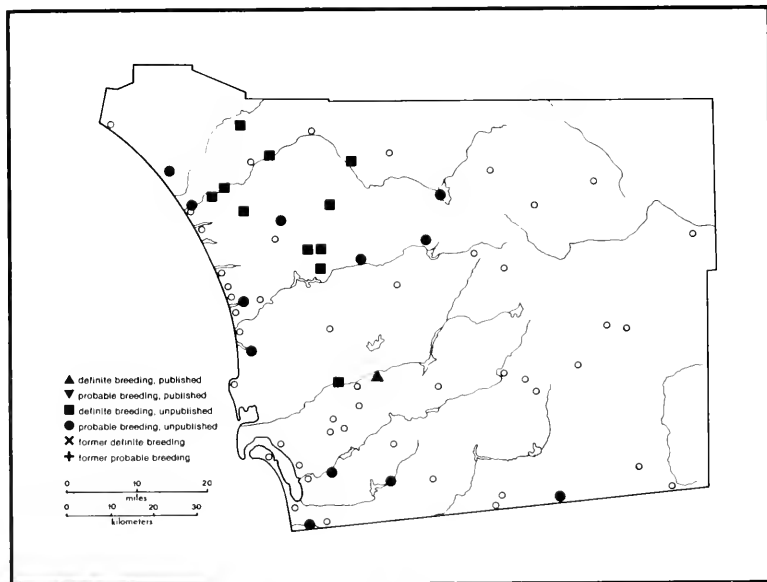
Fairly common to common spring and fall migrant, uncommon to locally common winter visitor, rare to uncommon summer resident. Migrating Turkey Vultures are widespread in San Diego County, concentrating over open fields and grassland. Formerly, great numbers occurred during spring migration, mid-January to early April. Scott (1936) reported "thousands" at Warner's Ranch in March 1883; E. Beemer noted 300 and Pauma Valley on 3 March 1944 and 100 at Morgan Hill on 5 March 1952. Flocks of these sizes have not been observed in recent years, however. The largest recent aggregations were found roosting in a eucalyptus grove at San Pasqual Valley Road and 17th Avenue, Escondido. This roost was used regularly in winter by over 50 birds (K. Weaver). S. Martin counted 57 there on 19 March 1981. Tragically, the trees were cut down and the roost site destroyed late in 1981, according to W. T. Everett. Twenty-five in a day (Whalen Lake, 22 January 1978; Lake Henshaw 19 July 1978, P. Unitt) is now a high count of foraging or migrating birds at other localities in both spring and fall. Fall migration extends probably from mid-June, and possibly even from early June, to late September. From October to early January, the species is restricted to the coastal lowland, so far as is known. It may be seen fairly commonly or even commonly at this season around Escondido, in

the lower San Luis Rey River Valley (30 on 1 January 1979, G. McCaskie), and in Camp Pendleton (17 on the same date, M. Baumgartel), but is rare elsewhere.

The present breeding distribution of Turkey Vulture in San Diego County is still poorly known, despite considerable study by W. T. Everett, who has contributed much information to this account. The species is widely but sparsely scattered in late spring and summer over the coastal slope. It occurs uncommonly at this season in the Escondido and San Pasqual areas; some birds continued to use the former roost near Escondido (10 on 20 June 1981, K. Weaver). Vultures are now rare in late spring in most of the coastal lowland, although they formerly bred at least as numerous in this area as farther inland. Everett did not find a single bird during his investigations of coastal nesting habitat (rocky outcrops with protected crevices) from 1978 to 1981, although many pairs used to nest in the region from Del Mar to Oceanside. The only definite nesting sites reported since 1970 are in the Merriam Mountains 3.9 km (1.5 miles) northwest of Jesmond Dene (nest scrape with molted down found in August 1980, T. Scott), on the north side of Potrero Creek just west of Potrero (nest with chicks in 1978, C. Culver), and 4 km (2.5 miles) east of Tecate (adult with two dark-headed immatures on 30 July 1981, H. A. Wier). Also, K. Weaver noted a pair attending a rocky hill at Harmony Grove south of San Marcos on 17 March 1979. Everett has identified several other areas where vultures are seen regularly during the breeding season; these are indicated with question marks on the map. In general, the species occurs uncommonly and locally from April to June in the foothill and mountain zones, with maximum numbers of six at Palomar Mountain on 16 May 1977 (E. Beemer), five 4 km (1.5 miles) east of Descanso on 6 June 1980 (W. T. Everett), five at Tecate on 30 May 1981 (R. Mattson), and seven at Potrero on 16 May 1978 (E. Nelson). Little is known of its status in the Anza-Borrego Desert during the breeding season, but it is evidently rare (one in the Borrego Valley on 14 May 1981, A. Morley; two east of Harper Flat in the Vallecito Mountains on 12 May 1981, M. Jorgensen).

Evidence for the great decline of the breeding Turkey Vulture population of San Diego County may be seen by comparing its present status with statements made by the early writers. Belding (1890) called the species a "common resident" at San Diego and Poway. McGregor (1899) wrote "quite common both at base and on the summit" of Palomar Mountain in mid-June 1897, while Dixon (1906) said "common everywhere all the time" at San Onofre. Sharp's (1907) summary for the Escondido area was "resident from about middle of January to November; nests regularly but sparingly in the rock piles on higher hills in April." Egg dates (60), 2 March - 12 May.

Several factors probably contributed to the decline of Turkey Vultures in San Diego County. Much nesting habitat has been eliminated by urban and agricultural development.

MAP 4. Breeding Distribution of Turkey Vulture (*Cathartes aura*)MAP 5. Breeding Distribution of White-tailed Kite (*Elanus leucurus*)

The birds probably have suffered by eating poisoned carcasses set out by ranchers to kill coyotes. Wilbur (1978b) documented an 11% decrease in the birds' eggshell thickness in California since 1947, presumably caused by DDT.

Subspecies: The Turkey Vultures in California (excluding the southeastern corner) are currently called *C. a. meridionalis*. *C. a. teter* being considered a synonym (Wetmore 1964). Specimens from San Diego County should be examined to determine if they might instead be the smaller *C. a. aura*, which occurs at least as far west as the Colorado River. No local specimens are preserved in SD.

CALIFORNIA CONDOR

Gymnogyps californianus (Shaw)

Formerly a fairly common resident, now extirpated. During the 19th century, condors probably occurred throughout the coastal slope of San Diego County. Stephens (1919a) stated the species was "fairly common when the country was first settled by Americans." An Indian living near Palomar Mountain told Scott (1936) that "in the [eighteen] sixties and seventies you could see fifteen, twenty, fifty in the sky at one time." A cattleman told him of "hundreds" of condors feeding on 300 lambs frozen in a snowstorm at Warner's Ranch in March 1886, but Wilbur (1978a) questioned the reliability of hearsay accounts of such large numbers. The major population decline in San Diego County occurred during the 1880s and 1890s. J. B. Dixon (in Willett 1933) saw condors along the San Luis Rey River "until about 1910," and the species was last recorded "13 miles [21 km] west of Oak Grove Station and only a few miles north of Palomar Mountain" (perhaps actually in Riverside County), where two individuals were seen on 3 August 1933 (Meadows 1933). Definite nest localities are "in the mountains near Warner's Ranch" (no date, Heermann 1859), along Boulder Creek in the Cuyamaca Mountains (March 1900, Gedney 1900), Palomar Mountain (11 March 1897, F. Stephens in Willett 1933), 4 km (1.5 miles) north of DeLuz ("found in 1886," WF 11156), and San Luis Rey River gorge near Escondido Canal intake, in the La Jolla Indian Reservation (4 March 1900 and 25 February 1902, L. Kiff, pers. comm.). Wilbur (1978a) gave egg dates for the species' entire range, from 11 February to 25 May, plus four listed only to month, one in June, two in July, and one in October. Other localities of condor occurrence reported somewhat definitely are Poway, "a rare species," and April 1884 (F. E. Blaisdell in Belding 1890; Emerson 1887), Volcan Mountain, "occasionally seen," and "spring of 1901" (Blaisdell in Belding 1890; Gilman 1907), and Santa Ysabel, one collected on 13 August 1890 (SD 1), and one captured on 24 May 1899 (Stephens 1899). Wilbur (1978a) listed a total of 24 specimens collected in the county between 1875 and 1903, and five eggs between 1886 and 1902.

Hawks and Eagles

Family Accipitridae

OSPREY

Pandion haliaetus carolinensis (Gmelin)

Uncommon fall and winter visitor, rare in spring and summer, two old nesting records. Ospreys occur most frequently along the coast and at lakes in the coastal lowland, more rarely at lakes in the foothill and mountain areas. Some localities where they have been observed frequently in recent years are Agua Hedionda Lagoon, Lake Hodges, Santee Lakes, and south San Diego Bay. The species is usually seen singly, but two individuals are occasionally found together (Los Peñasquitos Lagoon, 13 October 1974, A. Fries; Lake Poway, 8 December 1976, E. J. McNeil). Migrants or wanderers may be seen very rarely far from water, such as one flying over Paso Picacho Campground on 30 March 1974 (J. Dunn) and one over the La Posta Truck Trail on 18 June 1977 (W. T. Everett). Ospreys are most numerous from mid-September through November. Some individuals remain through the winter, with most departing by April. The species occurs least frequently from late May through July; fall migrants begin arriving in August.

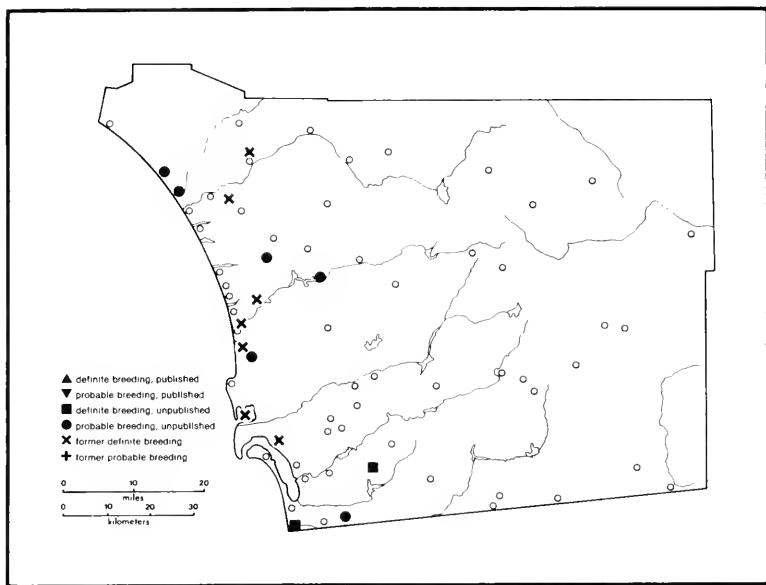
Cooper (1870) reported a pair attempting to build a nest on a boat stranded in San Diego Bay, probably in the early 1860s, but one of the birds was shot by the occupant of the boat. A set of four eggs was collected between 11 and 21 April 1912 from "beacon #1" in San Diego Bay (WF 71019).

WHITE-TAILED KITE

Elanus leucurus majusculus Bangs and Penard

Fairly common resident. White-tailed Kites prefer to nest in riparian woodland, live oaks, or groves of sycamores where these border grassland or open fields. Kites forage in any open, grassy area, and are often seen hovering even over the weedy margins of freeways. The largest numbers are seen where the birds gather to roost communally, such as 52 at Carlsbad on 25 February 1954 (AFN 8:270, 1954) and 51 in the Tijuana River Valley on 15 December 1979 (E. Copper). The breeding range covers most of the coastal lowland, but its eastward and upward altitudinal limits are not well understood. Nesting is not definitely known at altitudes higher than 430 m (1400 feet) (at Valley Center, A. Fries), but the species has been seen in the breeding season up to 820 m (2700 feet), east to Lake Henshaw (one on 5 April 1978) and Campo (one on 21 April 1977, P. Unitt). Egg dates (8), 1 March – 30 May; birds have been seen on nests as early as 19 February.

White-tailed Kites disperse rarely after breeding up into the mountain zone (Palomar Mountain, 2 August and 17 October 1976, E. Beemer; 14 September 1979, AB 34:201, 1980; 21 September 1980, AB 35:225, 1981). They have been noted five times on the east slope in the San Felipe Valley and in Sentenac Canyon, and five times lower in the

MAP 6. Breeding distribution of Northern Harrier (*Circus cyaneus*)

Anza-Borrego Desert, east to Borrego Sink (September 1973) and Elephant Trees Ranger Station (November 1966, March 1967, ABDSP file). Also, from about late July to early March they visit localities along the coast which are unsuitable for nesting, rarely reaching even Point Loma (two on 6 October 1975, J. Dunn).

Probably no other breeding species of San Diego County has shown such a dramatic change in status through history as the White-tailed Kite. Up until the early 1890s it was probably uncommon, though information from this period is extremely scanty. Belding (1890) did not mention the species for the county, but Willett (1912) wrote "Ingersoll informs me that from 1887 to 1892 he saw White-tailed Kites frequently in the vicinity of San Diego and knew of two pairs nesting in that region." Between 1892 and 1920, a period of very active egg collecting, there was not a single definite record, and Stephens (1919a) wrote "now very rare or completely exterminated in this county." Huey's (1931d) report of a newly built nest 8 km (5 miles) east of Del Mar in the "first week of March" 1920, and of a bird shot at the Tijuana River mouth on 15 January 1930 are the only records until 1945. An increase in abundance was noticed elsewhere in California by 1944 (Grinnell and Miller 1944), and recovery was underway in San Diego County by the late 1940s. A set of eggs was collected at San Luis Rey in 1945 (WF), and E. Beemer noted the species several times at Bonsall and Pauma Valley between 1947 and 1950. By

the late 1950s Sams and Stott (1959) were able to call the White-tailed Kite a "fairly common resident." During the 1970s, the species was probably more numerous than at any time during the preceding 100 years, and has adapted to suburban habitats, at least in winter. Rural areas are probably still necessary for successful reproduction, however.

BALD EAGLE

Haliaeetus leucocephalus (Linnaeus) subsp.

Rare winter visitor, one old nesting record. Bald Eagles usually occur around lakes, and have been recorded at several localities scattered throughout the coastal slope. The species is found most frequently and in greatest numbers at Lake Henshaw, where three to five often winter, and a maximum of up to 16 was recorded 13 December 1972 – 28 January 1973 (AB 27:663, 1973). Some other localities favorable for Bald Eagles are Whalen Lake (three on 20 January 1976 and 29 January 1977, J. Dunn); Lake Cuyamaca (20 December 1922, MVZ 144728) and Sweetwater Reservoir (three on 17 December 1979, AB 32:886, 1978). Fall migrants have been seen also very rarely along the coast away from normal wintering habitat: one at Torrey Pines on 22 November 1963, one in the Tijuana River Valley from 15 October to 30 November 1963 (AFN 18:73, 1964); and one at Point Loma on 23 October 1976. The Bald Eagle has been noted in San Diego County as early as

as 3 October (1978, one at Sweetwater Reservoir, D. Thompson) but is not regular until late October. Most winter visitors have departed by the end of March; 9 April (1978, one at Lake Henshaw, G. McCaskie) is the latest date. An egg collected at Lookout (= Little Tecate) Mountain on 8 March 1936 (WF 55005) represents all that is known of Bald Eagles breeding in San Diego County.

Subspecies: Bald Eagles nesting in California are *H. l. leucocephalus* (Linnaeus). However, Phillips et al. (1964) report that winter specimens from Arizona are closer to the larger, more northern *H. l. alascanus* Townsend. My measurements of the single specimen from San Diego County, an immature female, indicate that it, too, is *alascanus*: wing chord 600 mm tail 355 mm, culmen from cere 47 mm, tarsus 100 mm.

NORTHERN HARRIER or MARSH HAWK

Circus cyaneus hudsonius (Linnaeus)

Uncommon to fairly common migrant and winter visitor, rare and local summer resident. Harriers occur during migration and winter throughout San Diego County in grassland, agricultural fields, and coastal marshes. They are most common in the coastal lowland, where numbers as high as 10 in the Tijuana River Valley on 12 November 1977 (P. Unitt) and 19 at Sweetwater Reservoir on 15 December 1979 (D. Parker) have been seen. The schedule of their migrations is very poorly understood. The species is found mainly from September through March, but migrants may arrive occasionally as early as early August (one at Old Mission Dam on 4 August 1979, D. Ramsey). At Point Loma, where it neither breeds nor winters, J. Dunn has noted Northern Harrier from 24 September to 14 October.

Harriers have been seen at very few localities in recent years from mid-April through July when they are probably nesting: Tijuana River mouth and valley (present annually; two pairs on 3 May 1978, P. Unitt), Proctor Valley (nest found, C. Culver), Sorrento Valley (one individual on 26 June 1978, S. Goldwasser), northeast Lake Hodges (male on 15 July 1980; female from 5 April to 3 May 1981), and south of San Marcos at Questhaven and Elfin Forest roads (male on 15 July 1980, K. Weaver). Observations of displaying pairs at the Las Pulgas Creek mouth on 20 February 1978, and at the Santa Margarita River mouth on 13 March 1978 suggest that small numbers still breed in Camp Pendleton. Early April birds in the Borrego Valley (pair on 2 April 1977, one individual on 5 April 1978, P. Unitt) might also be local breeding birds. Formerly, the Northern Harrier was a much more widespread, though still uncommon, nesting species in the coastal lowland. Egg dates (11), 5 April - 11 May.

SHARP-SHINNED HAWK

Accipiter striatus velox (Wilson)

Uncommon migrant and winter visitor, casual in summer. Sharp-shinned Hawks visit woodlands, parks, and residential areas, a few trees seeming to be their only habitat re-

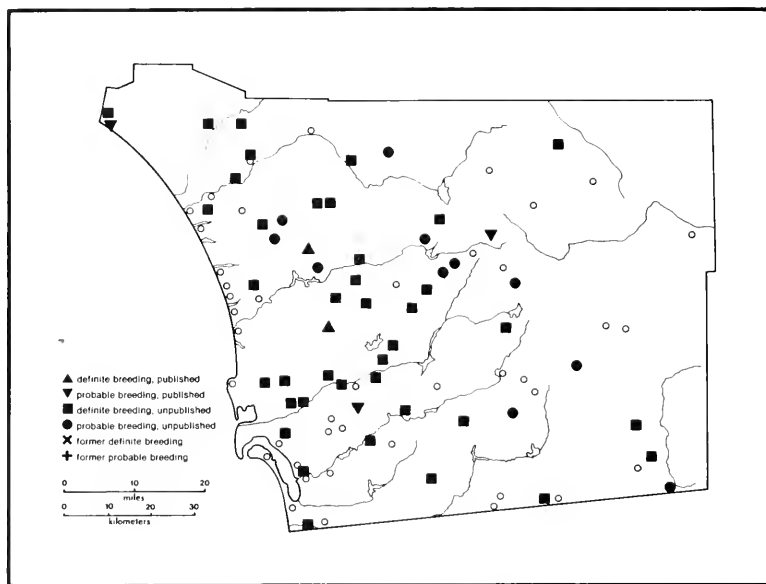
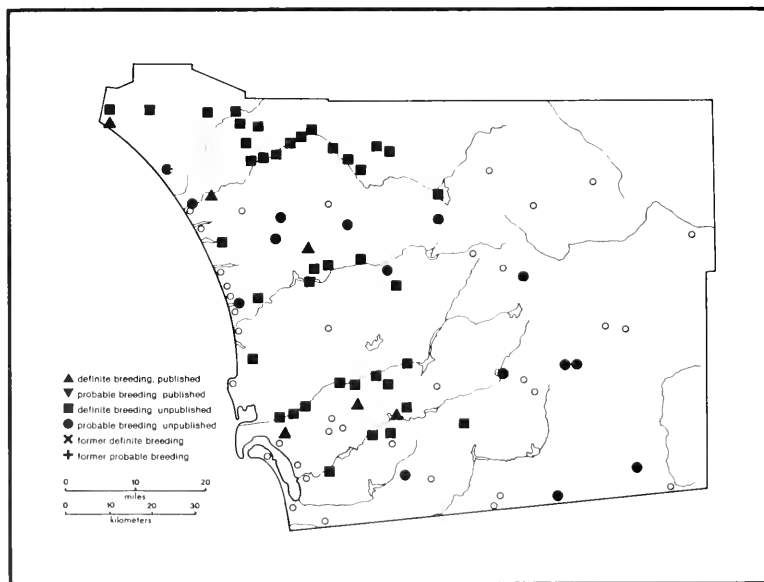
quirement in winter. They occur throughout San Diego County, but are rare in the Anza-Borrego Desert, where their habitat is scarce. The largest numbers of Sharp-shinned Hawks are encountered during fall migration at Point Loma, where the configuration of the coastline concentrates diurnally migrating birds of prey (15 on 24 September 1973; 10 on 4 October 1976, J. Dunn). Fall migrants arrive rarely by mid-September, regularly by late September, with early dates of 15 and 18 September (1974, one and three respectively at Point Loma, J. Dunn) and 20 September (1955, 8 km [5 miles] northeast of Lakeside, SD 30033). No concentrations have been observed in spring migration. Most winter visitors depart in March, and 6 April (1930, Point Loma, SD 12716) is the latest date.

Nesting of Sharp-shinned Hawks in San Diego County has never been documented, but J. B. Dixon (in Willett 1933) reported seeing the species "in the Cuyamacas and other mountains in San Diego County in summer. In one instance, the actions of the birds indicated a nest nearby." F. E. Blaisdell (in Belding 1890) mentioned seeing Sharp-shinned Hawks at Volcan Mountain as early as 21 August. In neither case were any specimens collected, and I consider both records questionable. Sharp-shinned and Cooper's Hawks are very easily confused, and the early ornithologists of California chronically misidentified hawks. J. Dunn observed an apparent pair of Sharp-shinned in Banner Canyon near Julian on 29 April 1978 (AB 32:1208, 1978), so breeding in San Diego County is still a possibility. The San Jacinto Mountains in Riverside County represent the known southern limit of the species' summer range.

COOPER'S HAWK

Accipiter cooperii (Bonaparte)

Uncommon migrant and winter visitor, rare summer resident. During migration and winter Cooper's Hawks are found throughout San Diego County, including the Anza-Borrego Desert. Their habitat requirements are similar to those of the Sharp-shinned Hawk, and the two species are sometimes seen at the same localities. Breeding Cooper's Hawks are virtually restricted to oak woodland. Information supplied by C. Culver indicates that nesting pairs are widely but sparsely distributed in this habitat on the coastal slope. Very rarely do the birds nest in sycamores, as at Grantville, or in non-native trees, as in Balboa Park. One nest has been found in the Anza-Borrego Desert, in Indian Canyon in June 1967 (ABDSP file). Four August reports from the desert region, including a specimen from Borrego Springs on 11 August 1976 (SD 39946) may indicate local residence, or some as yet not understood post-breeding dispersal. Egg dates (32), 31 March - 28 May; Sharp (1907) reported finding eggs in the Escondido area as late as 21 June. No quantitative data are available, but breeding Cooper's Hawks in San Diego County have probably declined as a result of human disturbance, urban and agricultural development. C. Culver noted the destruction of one nest site along Highland Valley Road east of Starva-

MAP 7. Breeding Distribution of Cooper's Hawk (*Accipiter cooperii*)MAP 8. Breeding Distribution of Red-shouldered Hawk (*Buteo lineatus*)

tion Mountain during the development of an avocado orchard.

Migratory concentrations have been noticed only in fall at Point Loma, such as five on 24 September 1973. Fall migrants begin to arrive by late September; rarely as early as the first week of September (one in the Tijuana River Valley on 6 September 1974, J. Dunn). Less precise information is available on spring departure, but winter visitors probably leave primarily during April, and are completely gone by the end of that month.

NORTHERN GOSHAWK

Accipiter gentilis atricapillus (Wilson)

Accidental, two records. One was collected at Lower Otay Reservoir on 9 November 1916 (Stephens 1919b, SD 11577), and another was collected at Mesa Grande on 5 January 1928 (Abbott 1928b, SD 11756). The winter of 1916–1917 was an invasion year for goshawks throughout California and Arizona.

HARRIS' HAWK

Parabuteo unicinctus superior van Rossem

Formerly a casual vagrant. One was collected in Mission Valley on 7 November 1912 (Grey 1913a, SD 1842) and another was seen near Oceanside 1–6 November 1942 (Kent 1944). More recent sightings probably are of birds that have escaped from falconers, with whom Harris' Hawks are unfortunately quite popular.

RED-SHOULDERED HAWK

Buteo lineatus elegans Cassin

Uncommon to fairly common resident. Red-shouldered Hawks inhabit almost the entire county west of the desert, extending east to Banner (one on 2 February 1978, E. Copper), Mount Laguna (four on 24 July 1976) and Boulevard (two on 26 June 1978, P. Unitt). They occupy a variety of woodland habitats: riparian willows and cottonwoods, groves of live oaks, and montane coniferous woodland. Stands of non-native trees may serve as breeding habitat, as in Balboa Park, and the birds have favored eucalyptus trees as nest sites since early in this century (Sharp 1906). Egg dates (180), 28 February – 13 May; Sharp (1906) reported finding a nest with two small chicks in the Escondido area on 4 July 1906. During the non-breeding season, individuals wander to areas in the immediate vicinity of the coast where the species does not breed, such as San Elijo Lagoon, Point Loma, and the Tijuana River Valley, but there is no well-marked migration. While concern has been expressed from time to time that the numbers of Red-shouldered Hawks are declining, Wilbur (1973) concluded that no major declines in population had occurred in California except possibly in the Sacramento and San Joaquin Valleys. In San Diego County, he noted that A. Fries' count of 13 nests in the Valley Center, Escondido, and Fallbrook areas was comparable to Dixon's (1928) record of 23 nesting locations within a radius of 48 km (30 miles) of Escondido. Dixon

did not believe any significant change in population size had occurred between 1907 and 1927, and it appears that in 1980 numbers nesting in the lowlands of San Diego County are approximately the same as in 1930. One change which seems to have escaped notice, however, is an upward extension of the Red-shouldered Hawk's altitudinal range. Dixon (1928) stated that 370 m (1200 feet) was as high as the species occurred, and Ramona, 430 m (1400 feet), represents the greatest altitude for an egg set preserved at WF. During the 1970s, however, Red-shouldered Hawks seemed nearly as numerous in the breeding season in montane woodland as in the lowlands, and E. Beemer observed incubating birds at Palomar Mountain in 1976 and 1977. While the mountains of San Diego County have never been the object of intensive ornithological study, it is inconceivable that the species was completely overlooked in this region. The early egg collectors paid considerable attention to Red-shouldered Hawks, and were evidently quite efficient at finding the nests, since WF contains more San Diego County egg sets of this species than any other except Golden Eagle and Belding's Savannah Sparrow. The expansion of Red-shouldered Hawk is interesting in contrast to the decline of Cooper's Hawk, since the habitat requirements of the two species seem quite similar.

BROAD-WINGED HAWK

Buteo platypterus platypterus (Vieillot)

Rare fall migrant, very rare winter visitor. The Broad-winged Hawk occurs as a fall migrant most frequently at Point Loma, with reports also from the Tijuana River Valley (one on 26 October 1969, AFN 24:100, 1970), Old Mission Dam (one on 27 September 1977, B. Cord), and along the Silver Strand (one on 16 October 1977, R. Copper). On Point Loma, normally only a single individual is seen on any one date, but a maximum of three was observed on 10 October 1977 (G. McCaskie). As many as seven Broad-winged Hawks have been recorded in San Diego County in one fall season (1977 and 1980, AB 32:257, 1978, and 35:226, 1981), but the species went unreported in 1971 and 1974. Recorded dates of fall migrants extend from 23 September (1972, one at Point Loma, AB 27:120, 1973) to 25 October (1969, cited above).

Winter visitors have been recorded on seven occasions: one in the Tijuana River Valley on 11 December 1966 (McCaskie 1968a, SD 36086, the only specimen) one in Leucadia 7–25 March 1968 (AFN 22:478, 1968), one in Otay 19 January – 2 March 1969 (AFN 28:520, 1969), one in Balboa Park on 20 December 1975 (AB 30:765, 1976), another there on 14 December 1976 (AB 31:373, 1977), one in Mission Valley on 25 February 1981 (AB 35:335, 1981), and one in Sheep Canyon in the northern Anza-Borrego Desert on 7 December 1977 (B. Cord). Possibly some of the birds observed in December were actually late fall migrants. One at Palomar Mountain on 2 April 1969 (AFN 23:625, 1969) may have been a spring migrant.

SWAINSON'S HAWK

Buteo swainsoni Bonaparte

Uncommon spring migrant, very rare fall migrant. Formerly a very common spring migrant and fairly common summer resident, but the local breeding population is now completely extirpated. Swainson's Hawks are now seen in spring migration almost exclusively in the Borrego Valley, where individuals or small groups soar over the agricultural fields or adjacent creosote bush scrub, and use the rows of tamarisk trees bordering the fields as resting places. When a vigorous growth of annual plants following spring rains results in an outbreak of large numbers of caterpillars, Swainson's Hawks may congregate to exploit this food source. The only large flocks seen in spring since 1962 have been found under such conditions; 120 on 10 April 1975 (AB 29:908, 1975) and 25 on 10 April 1976 (G. McCaskie). Outside the Borrego Valley, the Swainson's Hawk is very rare and has been reported recently only in the coastal lowland, with three spring records during the period 1963–1980: one in the Tijuana River Valley on 11 April 1964 (G. McCaskie), one at Presidio Park on 17 April 1974 (AB 28:852, 1974), and one at Oceanside on 29 March 1976 (AB 30:890, 1976). Spring migration begins in mid-March, peaks in early April, and ends by mid-May. In recent years the extreme dates recorded are 16 March (1975, G. McCaskie) and 15 May (1977, E. Copper) with single birds in the Borrego Valley on both dates. The timing of migration does not seem to have changed with the species' decline in numbers, since Sharp (1902) reported that at Escondido migrating Swainson's Hawks arrived "about the 10th to 20th of March."

Historically the species was much more numerous in spring migration. Cooper (1870) found it "pretty common near San Diego, March, 1862." Sharp (1902) saw it "sometimes in large flocks or in bands of a dozen or two" in the Escondido area. Considerable numbers were seen at times until the early 1960s, as indicated by 75 at Escondido on 4 April 1961 (AFN 15:439, 1961), and 60 in the Tijuana River Valley on 31 March 1962 (G. McCaskie). Very little information is available on fall migrants. Few ornithologists have visited the Borrego Valley in the fall and nothing was written about fall migrants in the early literature. The only fall records are of one at Ramona on 28 September 1955 (AFN 10:56, 1956), one in the Tijuana River Valley on 13 October 1962 (AFN 17:68, 1963), one there on 29 September 1963 (G. McCaskie), another at the same locality on 5 October 1969 (AFN 24:100, 1970), one on Point Loma on 9 September 1975 (AB 30:126, 1976), and a remarkable 21 in Camp Pendleton on 22 October 1977 (AB 32:257, 1978), the latest record for San Diego County.

The Swainson's Hawk formerly nested widely in the coastal lowland, where Sharp (1902) considered it the commonest breeding hawk. Riparian sycamores and cottonwoods were evidently the preferred sites for nests. While

Jamul at 305 m (1000 feet) represents the highest altitude of documented breeding, a specimen (SD 337) from Campo at 790 m (2600 feet) taken on 15 July 1877 suggests that Swainson's Hawks may have nested locally at higher elevations as well, though 15 July would have been late enough for post-breeding dispersal. Egg dates (33), 12 April – 26 May; Sharp (1907) reported finding eggs in the Escondido area as late as 1 June. The species' decline was underway by the 1930s, when E. E. Sechrist reported to Willett (1933) that it was "now scarce near San Diego." The most recent eggs from San Diego County deposited in WF were collected in 1933 also. No information has since been obtained on the species in summer; Sams and Stott's (1959) assessment of it as a "fairly common summer visitor" was undoubtedly based on outdated information.

ZONE-TAILED HAWK

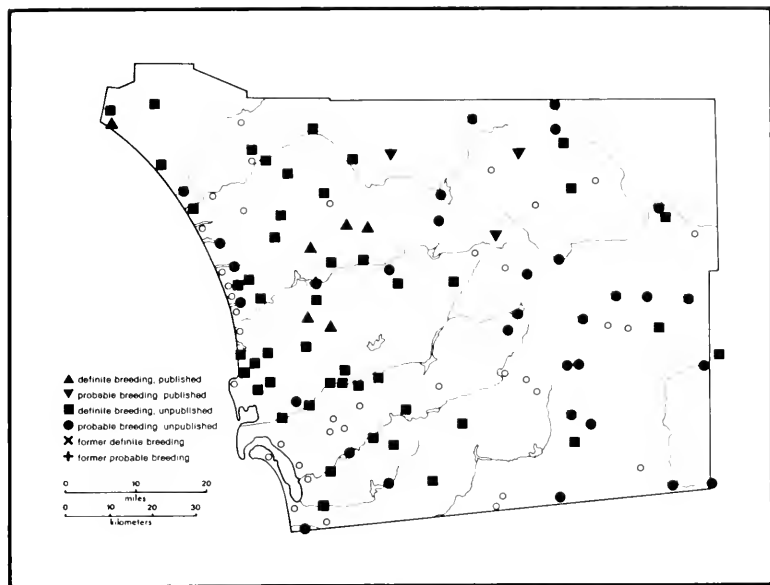
Buteo albonotatus Kaup

Very rare fall migrant, casual in winter, accidental in spring. Zone-tailed Hawks have been noted 11 times in fall between 3 September (1979, near Poway, AB 34:201, 1980) and 26 November (1906, National City, Linton 1907b). It is most frequent during mid and late September, with six reports for this period. All fall reports are from the coastal lowland, except one at Paso Picacho Campground on 10 October 1977 (AB 32:257, 1978). The species has been seen three times at Point Loma, a place where migrating hawks concentrate. Zone-tailed Hawks have been recorded six times in winter: 32 km (20 miles) north of San Diego on 23 February 1862 (Grinnell 1909, MVZ 4375), at San Diego on 20 December 1916 (Grey 1917), at Whalen Lake 13–15 January 1978 and on 13 January 1979 (AB 32:399, 1978 and 33:312, 1979), at Vista 1–29 February 1980 (AB 34:306, 1980), and at Corte Madera Lake on 10 January 1981 (AB 35:335, 1981). The single spring record for the county is of an immature collected at Chula Vista "about April or May" 1945, now mounted and on display in the Santa Cruz Museum of Natural History (Chester E. Bell, pers. comm. to G. McCaskie).

RED-TAILED HAWK

Buteo jamaicensis (Gmelin) subsp.

Fairly common resident and winter visitor. Red-tailed Hawks are distributed throughout San Diego County, including the Anza-Borrego Desert. They are most numerous around agricultural fields and grassland, but wandering individuals are seen often over any habitat. The species is somewhat more common from October to February, when the county probably receives migrants from farther north. Some high counts are 17 in east Carlsbad December 1979 (C. Edwards) and 23 in Rancho Otay on 18 December 1976 (R. Ford). Nests are usually situated in tall trees, especially sycamores, scattered in or bordering grassland. Numbers of Red-tailed Hawks breeding in San Diego County are little if at all reduced from their level in the early 1900s. While some habitat

MAP 9. Breeding Distribution of Red-tailed Hawk (*Buteo jamaicensis*)

has been eliminated by urbanization, clearing of land for agriculture has made many areas more suitable for them. Egg dates (159), 22 February – 15 April, except for one set from Escondido dated 3 June (WFVZ 10082). Sharp (1907) reported finding eggs as late as 4 May.

Subspecies: Only light phase adult Red-tailed Hawks are identifiable to race. Most of those collected in San Diego County are the darker, rustier *B. c. calurus* Cassin, which breeds widely in the western United States. Two specimens match the pale race *B. c. fuertesi* Sutton and Van Tyne ranging from southern Texas west at least to southern Arizona: one from Ocean Beach on 24 January 1921 (SD 2235), and another from Pringle Canyon near Dulzura on 10 February 1935 (SD 17074). Brandt (1938) also reported a *fuertesi* from Rose Canyon on 23 March 1929. Almost all of the Red-tailed Hawk specimens from the county were collected between October and February, so the racial affinity of the breeding population is not positively known. Some breeding birds might be *fuertesi*, but a molting bird from Mount Laguna on 10 September 1981 (SD 41603) is *calurus*.

FERRUGINOUS HAWK

Buteo regalis (Gray)

Uncommon winter visitor to grasslands and agricultural fields. The species is found most frequently and in the largest numbers in the broad valleys extending north and

east of Lake Henshaw, which constitute the largest region of unbroken grassland in San Diego County. A maximum of 15 was recorded there on 9 January 1977 (AB 31:373, 1977). Ferruginous Hawks occur throughout the coastal slope of the county, with Whalen Lake (one on 1 January 1979 and 22 December 1979, G. McCaskie), Rancho Otay (three on 15 December 1979, R. C. Smith) and Lake Cuyamaca (three on 21 January 1978, P. Unitt) being some other localities where they are often seen. In the Anza-Borrego Desert, two or three individuals are often present in the Borrego Valley, and the species has also been noted at Scissors Crossing (one on 13 January 1972, A. Fries) and Vallecito (one from 5 to 23 November 1978, W. T. Everett).

Ferruginous Hawks arrive regularly in early October, very rarely in mid-September (14 September 1962, one in the San Diego area, AFN 17:68, 1963 and 17 September, year not specified, Lake Cuyamaca, J. G. Peterson in Grinnell and Miller 1944). Most winter visitors depart in March, with a few remaining until early April. Late dates are 9 April (1978, three in the Borrego Valley, G. McCaskie) and 21 April (year not specified, Lake Cuyamaca, J. G. Peterson in Grinnell and Miller 1944). Reports of one at Mount Laguna on 1 May 1955 (AFN 9:359, 1955) and of one near Oceanside on 17 May 1958 (AFN 12:436, 1958) are probably erroneous.

ROUGH-LEGGED HAWK

Buteo lagopus (Pontoppidan)

Rare winter visitor to grasslands and agricultural fields. Most records are from the grasslands around Lake Henshaw and in the Warner Valley, where up to three have been found together (21 March 1976, AB 30:765, 1976). The Lake Cuyamaca area and the San Felipe Valley are also favored by Rough-legged Hawks. The species has been seen also at a few other localities scattered around the county, such as the Tijuana River Valley (3-18 February 1962, AFN 16:365, 1962), Escondido (25 February 1973, AB 27:663, 1973; 6 February 1975, AB 29:742, 1975), Ramona (two on 18 November 1974, AB 29:121, 1975) and the Borrego Valley (24 November 1961 and 13 February 1962, AFN 16:74 and 365, 1962). Dates of occurrence extend from 12 October (1969, one at Camp Pendleton, AFN 24:100, 1970) and 3 November (1977, one in the Tijuana River Valley, AB 32:257, 1978) to 28 March (1976, two near Lake Henshaw, AB 30:765, 1976). Other more common hawks, particularly Red-tailed and Ferruginous, are often incorrectly identified as Rough-legged Hawks, and therefore published records cannot be accepted without investigation. Huey (1924) reported collecting a Rough-legged Hawk 5 km (3 miles) west of Santee on 26 January 1921, and another in the Warner Valley on 15 November 1922, but the specimens (SD 30960 and 30961) are actually Ferruginous Hawks.

Subspecies? No specimen, but presumably *B. i. sanctijohannis* (Gmelin), since this is the only race wintering in North America.

GOLDEN EAGLE

Aquila chrysaetos canadensis (Linnaeus)

Uncommon resident. Golden Eagles are widely but sparsely distributed in San Diego County. They may be seen soaring over any habitat, but forage in grassland, broken chaparral or sage scrub, situations where they can effectively hunt rabbits and California ground squirrels, their principal food items. Thomas Scott studied the breeding distribution of Golden Eagle from 1977 to 1981 and researched the species' former status through the data preserved with collected egg sets, and communication with the collectors themselves. The following account is based largely on discussions with him. Scott estimates that 40-50 pairs were nesting in San Diego County during the late 1970s; he has located 40 active pairs, and believes that not more than 10 nesting sites remain to be discovered. Most of the population is located in the foothill zone and rugged inland sections of the coastal lowland (about 28 pairs). About seven pairs nest in the desert-edge zone and Anza-Borrego Desert, and only about five pairs nest above 1220 m (4000 feet) elevation in the mountain zone. The number of breeding pairs and the exact distribution of nest sites varies slightly from year to year, and as with all birds, there is a reserve population of unmated, non-breeding individuals. About 80% of the nests are placed on cliff ledges, 20% on trees,

usually those growing on steep slopes. The nature of the surrounding habitat apparently does not influence selection of a nest site. Egg dates (186), 6 February (a set taken as early as 2 February is in the Dixon collection, *vide* L. Kiff) - 26 April, exceptionally 16 June.

Immature Golden Eagles may disperse great distances (birds banded in San Diego County recovered in Utah and central Mexico) but there is no regular migration. Numbers present in the county remain fairly constant throughout the year. In fall and winter (mainly August-January) a few move into agricultural or grassland areas near the coast, such as the Tijuana River Valley, where they do not breed.

The distribution of breeding Golden Eagles in the foothill, mountain, and desert zones has changed little through history, but the territories of about 12 pairs in the coastal lowland have been eliminated by urbanization, agricultural development, and human disturbance. This represents a decline of about 23% in the county population. Most of this loss has occurred since 1965, and further decreases can be expected in the future, particularly if development of new avocado orchards continues in the rugged hills of northwestern San Diego County. Golden Eagles now nest near the coast only in Camp Pendleton; farther south, Lake Hodges, the Rancho Peñasquitos area, and San Miguel Mountain mark the limits of their breeding range in 1981. For an historical comparison, see Dixon (1937), who mapped the territories of 27 pairs of Golden Eagles in the northwestern quarter of San Diego County, and estimated a territory size of 36 square miles per pair.

Falcons

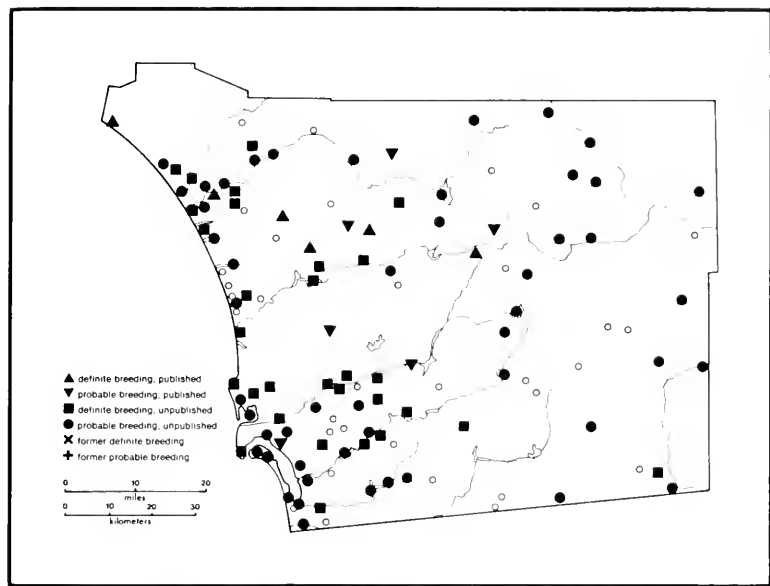
Family Falconidae

AMERICAN KESTREL

Falco sparverius Linnaeus subsp.

Fairly common resident. The American Kestrel is the most widespread and numerous bird of prey in San Diego County, and may be seen from coastal bluffs to mountain summits and the most barren sections of the Anza-Borrego Desert. Woodland edges, grassland, and agricultural areas are the species' preferred habitats, but it is also often found in residential areas, parks, broken chaparral, and desert scrub. Kestrels are rare only in dense woodland and continuous chaparral. Some numbers which illustrate the species' maximum abundance are 30 near Guajome Lake on 22 December 1979 (I. MacGregor), 15 at Lake Henshaw on 13 November 1977 (P. Unitt), and 19 at Bonita on 15 December 1979 (J. Oldenettel). Kestrels are probably most numerous in winter, but no information has been gathered on their migration or dispersal in San Diego County.

For nesting the birds require a cavity of some sort. They use holes in sycamores or cottonwoods most frequently, but also may place their nests in crevices in sea-bluffs at La Jolla and Point Loma, and among the leaf-bases of palm trees in residential areas. Egg dates (125), 21 March - 30



MAP 10. Breeding Distribution of American Kestrel (*Falco sparverius*)

May; Sharp (1907) reported finding eggs in the Escondido area as late as 14 June.

Subspecies: Nominate *sparverius* is the resident race in coastal San Diego County. A wanderer of the small form, *F. s. peninsularis* Mearns from Baja California or the lower Colorado River, was collected at San Diego on 6 November 1921 (SD 2288, wings 169.5–170.5, tail 115.5 mm). *Peninsularis* might be the resident form in the Anza-Borrego Desert, whence there are as yet no preserved specimens.

MERLIN

Falco columbarius Linnaeus subsp.

Rare winter visitor, usually encountered around agricultural fields or in grassland. Mudflats frequented by large flocks of shorebirds also occasionally attract Merlins. They occur throughout the coastal slope, but there is only one record for the Anza-Borrego Desert, of an individual at Agua Caliente Springs on 1 April 1973 (AB 27:819, 1973). Merlins are almost invariably solitary; the only report of more than a single individual is of two in the Tijuana River Valley on 21 December 1975 (G. McCaskie).

The earliest recorded fall dates are 23 August (1980, Tijuana River Valley, AB 35:226, 1981), 11 September (1959, "near San Diego," AFN 14:72, 1960), and 13 September (1925, Merton Valley, SD 9982), but the species does not occur regularly until early October. Most winter visitors depart in March, the latest records being 24 March 1927,

between Upper and Lower Otay lakes (SD 11332), the 1 April report cited above, and 9 April 1925, Mission Valley (Willett 1933).

A considerable decline in numbers has taken place since the early part of this century, when Stephens (1919a) called the Merlin a "rather common winter resident."

Subspecies: Most Merlins reaching San Diego County are *F. c. bendirei* Swann, which breeds in boreal forests from Alaska and Mackenzie south to Oregon and Idaho, excluding western British Columbia. Fourteen of the 15 study skins preserved in SD are of this form. The much paler race *F. c. richardsonii* Ridgway breeds on the Great Plains from southern Alberta and southwestern Manitoba to Montana and North Dakota, and winters mainly from Arizona and Wyoming south into northern Mexico. It is very rare as far west as San Diego County, with three specimens: San Diego, 10 January 1900 (SD 360, Huey 1926); Witch Creek, 9 February 1904 (Bishop 1905); and Mission Valley, "about the end of September" 1915 (Grey 1925, mounted and on display in SD). Sight records of *richardsonii* are of one at Sweetwater Reservoir on 5 February 1977 (J. Dunn), and another in the Tijuana River Valley on 5 November 1977 (P. Unitt). Observers could add significantly to our understanding of the distribution of Merlin by distinguishing between these two conspicuously different races. The blackish race *F. c. suckleyi* Ridgway from coastal British Columbia has been noted casually as far south as San Ber-

nardino and Imperial Counties and should be looked for in San Diego County.

Brown and Amadon (1968) and Stresemann and Amadon (in Mayr and Cottrell 1979) considered *bendirei* a synonym of nominate *columbarius* of northeastern North America.

PRAIRIE FALCON

Falco mexicanus Schlegel

Rare to uncommon winter visitor, rare breeding resident. Prairie Falcons are widespread throughout San Diego County during migration and winter, occurring usually in open grassland, agricultural fields, and desert scrub. Fall migrants probably begin to arrive in late August (Padre Barona Valley, 23 August 1925, SD 12296), certainly by early September (one in the Tijuana River Valley on 4 September 1974, J. Dunn). The timing of spring departure is poorly known; 8 March (1964, one in the Tijuana River Valley, G. McCaskie) is the latest recorded date for a locality far from a nesting site.

Mark Jorgensen, park naturalist at Anza-Borrego Desert State Park, and Craig Culver, a falconer who has watched Prairie Falcon nests in San Diego County since 1976, have provided information on the breeding distribution of the species during the 1970s. I have not included a map in order to protect the few nest sites of this rare and sensitive bird from unnecessary human disturbance. Twelve pairs are known to nest in Anza-Borrego Desert State Park, one in the desert-edge zone outside the park, and six on the coastal slope in the foothill zone. A few sites probably remain undiscovered, but the total population in the county does not exceed thirty breeding pairs. On the coastal slope nests are placed on ledges on rocky cliffs, while in the desert they are often placed on sandstone bluffs. Prairie Falcons usually lay their eggs around the first of April, and the only set of eggs from San Diego County in WF was collected on 4 April 1926. More precise information is needed on the schedule of the breeding season, however.

Virtually no information is available on the historic status of Prairie Falcon. Willett (1933) wrote that E. E. Sechrist knew "of two pairs nesting on the Pacific slope of San Diego County, both so difficult of access that the eggs have not been collected." The Prairie Falcon was evidently always rare as a breeding species on the coastal slope, because the early egg collectors, who paid great attention to the birds of prey, collected there only a single egg set, now in WF.

PEREGRINE FALCON

Falco peregrinus Tunstall subsp.

Rare fall and winter visitor; casual in late spring and early summer. Formerly a rare breeding resident, but the local population has been extirpated. Peregrine Falcons are seen most frequently along or near the coast, especially around mudflats, shores, or ponds where large numbers of water birds congregate. They are very rare farther inland on the coastal slope, with a few recent reports such as one at Lake

Henshaw on 5 September 1978 (P. Unitt), one at Mesa Grande on 20 October 1977 (A. Fries), and one 5 km (3 miles) north of San Pasqual on 5 December 1978 (H. Weir). The only record for the Anza-Borrego Desert is of one at Borrego Springs on 29 November 1963 (AFN 18:73, 1964). The earliest fall migrants may appear in July (one at the south end of San Diego Bay on 4 July 1978, AB 32:1208, 1978; one at Batiquitos Lagoon on 19 July 1979, AB 33:897, 1979), but they do not occur regularly until early September. Peregrine Falcons are most frequent from October through March, and may linger occasionally as late as late April (one at the San Diego River mouth on 25 April 1978, C. G. Edwards). The species is casual in May and June (one at the San Diego River mouth on 16 May 1977, AB 31:1047, 1977; one at downtown San Diego on 5 June 1955, AFN 9:359, 1955).

A population of approximately 10 pairs of Peregrine Falcons formerly nested along the coast and in the coastal lowland of San Diego County. The most precisely known and thoroughly documented regular nesting localities were San Onofre (Dixon 1906), Ysidora on the lower Santa Margarita River (WF, Dixon 1917), Pala (WF, Dixon 1917), Escondido (Sharp 1907, Sharp 1919), San Pasqual, La Jolla, and Point Loma (WF). The most recent known breeding occurred in 1950, when an egg was collected on 28 March on a "sea wall" (no locality specified, WF). Nests were placed on bluffs overlooking the ocean, or on rocky cliffs inland. Egg dates (54), 11 March-25 May; Field (in Willett 1933) collected eggs "near San Diego" as early as 8 March.

Subspecies: *F. p. anatum* Bonaparte is the usual race in San Diego County. A darker form, *F. p. pealei* Ridgway from the Pacific Northwest, winters rarely as far south as California. One specimen of *pealei* has been reported from San Diego County: San Diego Bay, 31 March 1908 (Swarth 1933, CAS 11694). White (1968) described the pale Peregrine Falcons breeding in the arctic regions of North America as *F. p. tundrius*. He listed one winter specimen of *tundrius* from Los Angeles County, so this form might be expected occasionally in San Diego County as well.

Waterfowl

Family Anatidae

FULVOUS WHISTLING-DUCK

Dendrocygna bicolor (Vieillot)

Formerly occurred to some extent throughout the year, but now extirpated in the wild state. Very little information is recorded from the county regarding Fulvous Whistling-Duck, and neither its seasonal nor its spatial patterns of distribution in this area were ever well documented. Stephens (1919a) wrote "Rather common spring migrant. Rare winter visitant. Stragglers may remain through summer and breed." Salvadori (1895) recorded a specimen taken at San Diego in December, year not cited. Three

specimens are preserved in SD: Mission Bay, 10 September 1922 (11313); 8 km (5 miles) west of Santee, 14 December 1954 (30023); and Warner Springs, 21 October 1956 (30051). J. B. Dixon (in Willett 1933) noted small young in the San Luis Rey River Valley on 18 May 1931. These are all the records of native Fulvous Whistling-Ducks in San Diego County; one collected at "Unlucky Lake" (not located) on 30 April 1891 (Wetmore and Peters 1922) may well have been in present Imperial County. Most or all recent reports involve escapees from captivity. *Bona fide* wild birds are unlikely to be identified again in San Diego County, since large numbers of free-flying individuals have been kept at Sea World on Mission Bay, and at the Wild Animal Park in San Pasqual.

Subspecies: North American breeding birds were formerly distinguished as *D. b. helva* Wetmore and Peters, but the species is now usually considered monotypic.

WHISTLING SWAN

Cygnus columbianus columbianus (Ord)

Very rare winter visitor, occurring most frequently on lakes and on the lagoons of northern San Diego County. Some typical recent observations are: one at Whalen Lake 31 December 1977 – 14 January 1978 (AB 32:398, 1978), one at Buena Vista Lagoon on 22 November 1977 (A. Fries), and one at San Dieguito Reservoir on 15 December 1963 (AFN 18:386, 1964). Whistling Swans also have been recorded once on Mission Bay (eight during the winter of 1956–1957, AFN 11:290, 1957, and four times at the San Diego River mouth (12 on 9 December 1956, AFN 11:60, 1957; one on 12 November 1977, AB 32:257, 1978; one on 16 November 1978, AB 33:213, 1979; and one on 19 November 1980, AB 35:225, 1981). The report for San Diego Bay (AB 30:765, 1976) may be in error. In recent years swans almost always have been seen singly; the only exceptions are two at San Elijo Lagoon on 6 December 1963 (AFN 18:386, 1964) and two near Pala 11–24 February 1979 (AB 33:312, 1979).

Most Whistling Swans reported in San Diego County have been found in December and January. The extreme early date recorded is 12 November (1926, two at Lake Morena, SD 11307–8); the latest dates are 24 February (1947, two at Otay Reservoir, SD 19214–5) and 5 March (1970, one at Oceanside, AFN 24:538, 1970).

Whistling Swans were evidently more numerous earlier in the century than they were from 1958 to 1980, as indicated by such reports as 30 in "late December" 1917 and "a flock of over 75...a few days" previous to 21 December 1918 at Warner Springs; 23 at Sweetwater Reservoir on 10 December 1919 (Stephens 1920a); and 15 at Del Mar about 20 November 1956 (AFN 11:60, 1957).

Subspecies: The Whistling Swan is now usually considered conspecific with Bewick's Swan *C. c. bewickii*, which breeds on the tundra of the northern Soviet Union.

WHITE-FRONTED GOOSE

Anser albifrons frontalis (Baird)

Rare winter visitor. White-fronted Geese visit lagoons, ponds, and lakes along the coast and in the coastal lowland.

Some typical records are: three at O'Neill Lake on 9 January 1976, one at San Elijo Lagoon on 4 December 1970 (A. Fries), and two at Coronado on 15 December 1972. The highest numbers observed in the coastal area in recent years are 15 in the Tijuana River Valley on 29 September 1963, 18 flying south at Imperial Beach on 12 October 1963 (G. McCaskie), 15 at Whalen Lake on 9 February 1974 (J. Dunn), and nine at Whalen Lake on 4 February 1978 (B. Cord). Four definite occurrences are known for the mountain and foothill regions of San Diego County: two at Lake Cuyamaca on 5 January 1919 (SD 30900–1), eight at Lake Henshaw on 13 November 1979 (AB 34:200, 1980), and flocks of 50 and 11 seen flying over Palomar Mountain on 29 January 1978 (B. Cord) and 13 March 1981 (R. Higson) respectively.

The earliest fall record is in late September (cited above), but only three occurrences are known for October and the species is very rare before mid-November. Most wintering White-fronted Geese depart in mid or late February, but an exceptional individual remained to 20 April in 1974 along the Silver Strand (J. Dunn).

White-fronted Geese were probably much more common in the 1800s than in the 1900s; Stephens (1919a) wrote "formerly common winter resident."

Subspecies: Delacour and Ripley (1975) and Palmer (1976) recently addressed the problem of variation in the White-fronted Goose, but presented different concepts of expressing this variation subspecifically. One of the five specimens from San Diego County in SD is definitely the small race *A. a. frontalis*, which breeds at least in western Alaska and possibly farther east in northern Alaska and arctic Canada. Two specimens fall in the range of overlap between *frontalis* and *A. a. gambeli* Hartlaub, while the other two are unsexed and so not identifiable.

SNOW GOOSE

Anser caerulescens caerulescens (Linnaeus)

Uncommon and localized winter visitor. Snow Geese are found regularly only with the large flocks of Canada Geese at Whalen Lake (up to 25 on 1 January 1977, G. McCaskie) and at Lake Henshaw (up to 10 on 2 February 1978, P. Unitt). Scattered individuals or small groups are found rarely at other places along or near the coast, such as four at San Elijo Lagoon on 5 January – 2 February 1975 (SEL surv.), two at Sweetwater Reservoir 18 December 1976 – 5 February 1977 (W. T. Everett, J. Dunn), and one at the south end of San Diego Bay on 15 December 1972 (G. McCaskie). Larger flocks of migrant or wandering Snow Geese have been noted at San Diego Bay on 6 January 1963 (23) and 6 November 1976 (20, G. McCaskie) and at Pauma Valley on 4 October 1951 (100, AFN 6:37, 1952).

Although the Snow Goose has been recorded twice in October (the Pauma Valley record cited above and at Corte Madera on 20 October 1929, SDNHM 12501), the species normally arrives in early November. Spring departure occurs in mid or late February, with 21 February (1976, two at Whalen Lake, G. McCaskie) being the latest date recorded for normal winter visitors. A bird at Jacumba from 26 April to 5 June 1964 (G. McCaskie) was exceptional both for the date and locality.

No quantitative data are available, but Snow Geese were far more abundant in the nineteenth century than in the twentieth. Belding (1892a) said the species "was abundant in the northern part of San Diego County in the winters of 1884 and 1885." The major decline had occurred by 1919, when Stephens wrote "formerly abundant winter resident, now much less plentiful." Only the white phase has been noted yet in San Diego County, though the blue phase occurs rarely in the Imperial Valley.

ROSS' GOOSE

Anser rossii (Cassin)

Rare winter visitor. Ross' Geese are usually found with flocks of Snow Geese, but sometimes on ponds or lakes by themselves. The species is most frequently noted at Whalen Lake, where the maximum of seven was seen on 1 January 1979 (AB 33:659, 1979). Lake Hodges is the only other locality where more than a single individual has been seen (three, 17–18 January 1981), and Lake Henshaw is the only locality of occurrence outside the coastal lowland (one on 26 December 1980, AB 35:335, 1981). Most of the 14 county records are for December through February; extreme dates are 15 November (1966, Nestor, AFN 21:77, 1967) and 6 April (1977, Lake Miramar, AB 31:1047, 1977). Occurrence of Ross' Geese in San Diego County has not yet been documented with specimens or photographs.

CANADA GOOSE

Branta canadensis (Linnaeus) subsp.

Abundant but localized winter visitor. Large flocks winter regularly at Whalen Lake and at Lake Henshaw. Typical numbers for the former locality are 2000 on 3 January 1976 and 3500 on 22 December 1979 (G. McCaskie); for the latter, 2000 on 2 February 1974 (A. Fries) and 1000 on 21 January 1978 (P. Unitt). Smaller aggregations occur annually at Sweetwater Reservoir (75 on 21 December 1975, G. McCaskie), at Lake Hodges (120 on 21 February 1974, A. Fries; 179 on 30 November, 1978, P. Unitt), and probably at a few other large lakes. Migrating or wandering individuals or groups may be found on any body of water along the coast or inland, such as two at Agua Hedionda Lagoon 27 November 1978 (P. Unitt), eight on San Diego Bay at Shelter Island on 31 January 1975 (J. Dunn), 30 in the Tijuana River Valley on 27 November 1975, and 20 on the San Diego River 1.6 km (1 mile) east of Old Mission Dam on 19 March 1977 (G. McCaskie). There are six records for the Anza Borrego Desert between late

November and January (Banks 1967, ABDSF file).

The major fall influx of Canada Geese occurs in mid-November, with 8 November (1969, two at the San Diego River mouth, AFN 24:99, 1970) being the earliest recorded fall date. Little information is available on the timing of spring departure. A decrease is noticeable by late February, but large numbers are still present then. However, the observation on 19 March cited above seems to be the only report for March.

By the 1970s Canada Geese were much less widespread in San Diego County than in the nineteenth century. Heermann (1859) "observed these birds very abundant about the bay of San Diego," while Stephens (1919a) wrote "formerly common winter resident, now much diminished."

Subspecies: Three races (*B. c. moffitti* Aldrich, *B. c. parvipes* (Cassin), and *B. c. minima* Ridgway) have been reported from San Diego County, often under different names, reflecting the confused taxonomic history of the species. *B. c. moffitti*, a large form, breeds from central British Columbia and Manitoba south to northeastern California and Wyoming. *B. c. parvipes* is smaller than *moffitti*, and breeds from central Alaska east through the Northwest Territories to Hudson Bay. *B. c. minima*, the Cackling Goose, is very small and has a stubby bill; it breeds on the west coast of Alaska and winters mainly in the Sacramento and San Joaquin valleys. The vast majority of the Canada Geese occurring in San Diego County are of the two larger races, but the ratio between them has never been determined. The only local specimen I have examined (Point Loma, 9 January 1975, SD 39151) is *moffitti*. Anthony (in Belding 1892a) reported "*hutchinsii*" (= *parvipes*) to be numerous in parts of San Diego County, but published information on the subspecies of Canada Geese in this area is so skimpy and ancient as to be nearly worthless. The status of *minima* is slightly better known, as it can be distinguished in the field when other birds are nearby to afford a size comparison. It is a rare winter visitor, with six definite sight records: two at the San Diego River mouth on 8 November 1969 (AFN 24:99, 1970), one at Lake Poway on 24 February 1972 (A. Fries), one in the Tijuana River Valley 10–13 November 1977 (J. Dunn), one at Whalen Lake 9–22 December 1979 (AB 34:306, 1980), one at Sweetwater Reservoir on 15 December 1979 (D. Parker), and one at Mission Bay on 19 November 1980 (AB 35:225, 1981). In addition, Belding (1892) reported it without details from San Diego County, and McCaskie considered it a regular fall migrant during the 1960s. Obviously any Canada Goose shot or found dead is a valuable specimen which should be preserved in a museum for scientific study of migration.

BRANT

Branta bernicla (Linnaeus) subsp.

Very common but extremely localized winter visitor, more widespread during migration, rare in summer. Brant occur principally in the flood control channel at the mouth of the

San Diego River, in numbers such as 1000 on 21 February 1968 (AFN 22:477, 1968) and 300 on 8 November 1975 (G. McCaskie). Flocks occasionally winter on south San Diego Bay (108 on 20 December 1975, AB 30:610, 1976), but the species is rare elsewhere along the coast during December and January. Migrants may be seen on any body of salt water along the coast or flying over the ocean near shore (40 off La Jolla on 21 February 1978, D. Povey). They are generally uncommon away from the San Diego River mouth during fall migration, early November to late November; one at the Tijuana River mouth on 16 November, one at Agua Hedionda Lagoon on 27 November (P. Unitt). The major fall arrival is in early November, with an earliest recorded date of 28 October (1972, one at the San Diego River mouth, G. McCaskie).

Brant are most abundant and widespread during spring migration, usually mid-February to late April (300 on San Diego Bay on 22 March 1964, G. McCaskie). A few stragglers remain into early May; late dates are 9 May (1978, six on San Diego Bay, P. Unitt), 12 May (1976, one at the San Diego River mouth), and 16 May (1964, one at the same locality, G. McCaskie). Birds that winter in the Gulf of California migrate to the Pacific Ocean by way of San Diego County, usually non-stop. Occasionally they rest on large lakes, mainly Henshaw and Cuyamaca. Usually single individuals or small groups are seen inland, but large flocks have been noted a few times, up to 38 at Lake Cuyamaca on 22 April 1967 (AFN 21:540, 1967) and 211 at Lake Henshaw on 4 March 1980 (AB 34:814, 1980). Individuals are forced down very rarely onto the Anza Borrego Desert or the east slope of the mountains (Banks 1967), and a flock of 50 was noted flying up Banner Canyon near Julian during strong winds on 13 March 1977 (AB 31:1047, 1977). Dates of inland observations extend from 4 March to 22 April (both records cited above).

Scattered individuals remain through summer on bays and estuaries. Some typical summer records are: one at the Santa Margarita River mouth 19 July – 30 August 1978, one at Batiquitos Lagoon on 10 June 1978 (P. Unitt), and one on San Diego Bay 5 July – 2 August 1964 (G. McCaskie).

Brant were formerly much more numerous. Cooper (1868) wrote "large numbers winter in San Diego Bay," but the species had already declined by the second decade of the 20th century (Stephens 1919a). Mission Bay was an important wintering area until it was developed in the late 1950s, as indicated by Pearson's (1928a) report of "several hundred" there in 1928. Moffitt (1938) reported a count of 325 on Mission Bay and 397 on San Diego Bay on 12 February 1938.

Subspecies: *B. b. nigricans* (Lawrence), the Black Brant, which breeds in northeastern Siberia, Alaska, and western arctic Canada, is the common form in San Diego County. *B. b. hrota* (Muller), Atlantic or Light-bellied Brant, which breeds in eastern arctic Canada, Greenland, and on some Arctic Ocean islands, occurs here very rarely with flocks of *nigricans*. There are seven sight records (as yet no

specimens) of *hrota* for San Diego Bay between 5 November (1966, AFN 21:77, 1967) and 11 April (1964, AFN 18:486, 1964), one for the San Diego River mouth (27 January – 3 April 1971, AB 25:627, 1971), and one for Mission Bay (4 April 1978, AB 32:1054, 1978). *Hrota* has been observed singly on all occasions but one: three on San Diego Bay from 22 March to 11 April 1964 (AFN 18:386 and 486, 1964).

WOOD DUCK

Aix sponsa (Linnaeus)

Rare winter visitor to ponds and lakes in the coastal lowland. A sample of localities where the species has been found is: Pauma Valley (one on 19 February 1975, AB 29: 741, 1975), Valley Center (one on 19 February 1978, A. Fries), Ramona (one shot in November 1905, Sharp 1906), Sorrento Valley (one on 15 November 1964, AFN 19:78, 1965), Lower Otay Lake (one from 17 to 25 October 1970, AB 25:108, 1971). There is one winter record for the foothill zone, of one shot at Warner Springs "a few days previous to" 29 November 1918 (Willett 1919). Very rarely is more than a single individual seen at one time, and the maximum recorded is three at Lake Murray on 10 December 1954 (AFN 9:285, 1955), except for a flock of 30 at El Capitan Reservoir on 10 January 1981 (AB 35:335, 1981). Wood Ducks are first seen in fall in mid-October, with earliest dates of 10 October (1977, one at Border Field State Park, J. Wolstencroft) and 14 October (1966, one in Mission Valley, AFN 21:77, 1967; and 1967, one on Otay Mesa, G. McCaskie). Most winter visitors depart by March, with 29 March (1978, one at Santee Lakes, C. Edwards) being the latest record. There is one summer report, of one at Lake Henshaw 21–30 June 1981 (R. Higson). Wood Ducks are popular avicultural subjects, however, so escapees might be seen at any time of the year.

EURASIAN WIGEON

Anas penelope Linnaeus

Rare winter visitor, always occurring with flocks of American Wigeons. Eurasians are most frequently reported from Whalen Lake (each winter but one since 1972), but two there on 22 December 1979 (AB 34:656, 1980) is the only report of more than a single individual. Other localities for the species are the San Diego River mouth (four records), Lake Henshaw (two records), Lake Cuyamaca (4 April 1981), and San Elijo Lagoon (7 February – 19 April 1981, V. Gilmore and G. McCaskie). Most Eurasian Wigeons occur from mid-November to late February; one at the San Diego River mouth on 12 November 1968 (AFN 23:520, 1969) is the earliest report, while the two April observations mentioned above are exceptionally late. No specimen has yet been collected in the county.

AMERICAN WIGEON

Anas americana Gmelin

Very common to abundant winter visitor, casual in summer. Wigeons are found in greatest numbers on fresh-water lakes

on the coastal slope, on the lagoons of northern San Diego County, and at the San Diego River mouth; smaller numbers occur on the salt water of San Diego and Mission Bays. Some large concentrations are: 750 at Batiquitos Lagoon on 6 October 1978, 200 at the San Diego River mouth on 1 December 1978, 1000 at Lake Henshaw on 18 November 1978 (P. Unitt), and 1500 at Whalen Lake on 31 December 1977 (W. T. Everett).

The earliest fall migrant has been recorded in late August (one at Batiquitos Lagoon on 30 August 1978), but American Wigeons are not seen regularly until mid or late September (15 at Batiquitos Lagoon on 16 September 1978; one in the Tijuana River Valley on 23 September 1974, P. Unitt). Spring departure from the coast is nearly complete by the end of March, though a few late migrants may still be present in early April (two at San Elijo Lagoon on 6 April 1975, SEL surv.; three at the San Diego River mouth on 10 April 1978, P. Unitt). In the mountains however, American Wigeons remain until the middle of April (150 at Lake Henshaw on 9 April 1978; 25 at Lake Cuyamaca on 14 April 1979, G. McCaskie). Summer stragglers have been noted at the San Diego River mouth on 2 May 1975 (two, J. Dunn) and on 30 June 1978 (two, C. G. Edwards), and at San Elijo Lagoon on 4 August 1974 (one, SEL surv.).

GADWALL

Anas strepera strepera Linnaeus

Uncommon to fairly common winter visitor, uncommon and localized breeding resident. Gadwalls frequent the same habitats as the other "puddle ducks" (genus *Anas*), but keep mostly to the coastal lowland. Reports from the foothills and mountains are few, with none in winter (Lake Cuyamaca, 16 October 1940, Grinnell and Miller 1944; one at Lake Henshaw on 1 April 1978, P. Unitt). Unlike the more common species, migratory concentrations of Gadwalls are not known, and the largest numbers are found in winter: 30 at Sweetwater Reservoir on 1 December 1963 (G. McCaskie); 24 at the San Diego River mouth on 20 March 1977 (C. Edwards). Timing of migration is still poorly known. Extreme dates for non-breeding localities are 16 October (cited above) and 19 April (1978, 12 at the San Diego River mouth, C. Edwards), but these may not indicate the true migration schedule, especially in fall.

Alice Fries first discovered San Diego County Gadwalls breeding in 1971, a brood of chicks at Buena Vista Lagoon on 10 June (AB 25:906, 1971). Since then, broods have been found annually at Buena Vista Lagoon or the Santa Margarita River mouth (A. Fries), and a brood was seen at Batiquitos Lagoon on 22 May 1978 (P. Unitt). In the summer of 1980, chicks were seen at Lake Henshaw and in the Tijuana River Valley (AB 34:929, 1980). In addition, the species occurs regularly in summer at San Elijo Lagoon (up to 21 on 2 June 1974, SEL surv.), and a single individual was at Agua Hedionda Lagoon on 6 June 1978. The only nest with eggs was found in dense *Salicornia* at the Santa

Margarita River mouth on 22 May 1978 (P. Unitt), but chicks have been observed from 22 May to 23 June.

GREEN-WINGED TEAL

Anas crecca Linnaeus subsp.

Very common to abundant migrant and winter visitor, one old record of nesting. Green-winged Teal are widespread on fresh and brackish water throughout the coastal slope, occurring in numbers as large as 200 at Bonita on 11 January 1964 (G. McCaskie), 340 at San Elijo Lagoon on 1 December 1974 (SEL surv.), and 1000 and 2000 at Lake Henshaw on 2 February and 18 November 1978, respectively. Smaller numbers are found on salt water during migration: 10 at the south end of San Diego Bay on 28 September 1974; eight at Shelter Island on 8 February 1975 (P. Unitt). The species has been reported five times in the Borrego Valley area from August to February (ABDSP file). Fall migrants begin to arrive in numbers in mid and late August, with an earliest known date of 9 August (1978, five at the Santa Margarita River mouth, P. Unitt). In spring, most Green-winged Teal have departed by mid-April, but a few individuals linger into early May in some years, and 5 May (1974, 15 at San Elijo Lagoon, SEL surv.) is the latest recorded date. Sams and Stott (1959) stated that "occasional individuals remain through the year," but I have found no definite reports for summer.

J. B. Dixon (in Willett 1933) observed a "nest containing 11 pipped eggs" in the San Luis Rey River Valley on 18 May 1931. This is the only record of Green-winged Teal nesting in California south of Kern County.

Subspecies: The common form in San Diego County is *A. c. carolinensis* Gmelin, which occurs throughout North America except on the Aleutian Islands. The Old World race, *A. c. crecca* Linnaeus, is a casual visitor, with five sight records of single males: Bonita, 29 January – 24 February 1962 (AFN 16:364, 1962); San Elijo Lagoon, 18–24 March 1973 (AB 27:662, 1973); Batiquitos Lagoon, 12 December 1973 (AB 28:692, 1974); Lake Cuyamaca, 11 March 1979 (AB 33:312, 1979); and same locality, 16 March 1980 (presumably the same individual returning, AB 34:306, 1980). Also, an apparent hybrid *crecca* x *carolinensis* was at Bonita 4 January – 1 February 1963 (AFN 17:358, 1963); the bird showed both the horizontal and vertical white stripes on the body.

MALLARD

Anas platyrhynchos platyrhynchos Linnaeus

Common to very common migrant and winter visitor, generally uncommon to fairly common in summer, with some local breeding. Mallards are found throughout the coastal slope on lagoons, estuaries, ponds, and lakes, and nest in marshes. Some large concentrations in migration and winter are: 200 at Batiquitos Lagoon on 15 August 1978, 500 at Lake Henshaw on 18 November 1978 (P. Unitt), and 50 at Whalen Lake on 22 January 1978 (G. McCaskie). The seasonal pattern of Mallard occurrence in

San Diego County is very poorly known. Migrants are present at least from mid-August to early April, and the species is generally most common during that period. At San Elijo Lagoon, however, the largest numbers have been seen in summer, up to 212 on 2 June 1974 (SEL surv.).

Definitely known breeding localities are "near San Diego" (ovulating female on 24 April 1862, Cooper 1880; eggs on 19 May 1897, from Willett 1933), Escondido (nest in 1896, Sharp 1907), Lake Henshaw (young in 1931, J. B. Dixon in Willett 1933), San Elijo Lagoon (eggs on 4 June 1977), San Dieguito River mouth (eggs on 15 May 1978), San Diego River 1.6 km (1 mile) east of Old Mission Dam (chicks on 21 April 1978, P. Unitt), Kit Carson Park (eggs on 31 March 1978 and 9 May 1981), and east Lake Hodges (juvenals with female on 30 May and 27 July 1981, K. Weaver). The species occurs through summer and undoubtedly breeds at several other localities both along the coast and inland. In many places domesticated birds confuse the situation by occupying habitat in which wild Mallards might breed.

NORTHERN PINTAIL

Anas acuta acuta Linnaeus

Abundant migrant and winter visitor, uncommon in summer, nests sporadically. The pintail is our most widespread and abundant puddle duck, occurring in large numbers on the coastal wetlands or lakes throughout the coastal slope. Large flocks are often seen in migration even far out over the open ocean (500 between San Diego and San Clemente Island on 16 August 1969, G. McCaskie). Some examples of large concentrations are 5300 at San Elijo Lagoon on 1 December 1974 (SEL surv.), 2000 at Batiquitos Lagoon on 26 August 1978, and 1500 at Lake Henshaw on 18 November 1978 (P. Unitt). Fall migrants begin arriving in mid or late July; early dates are "about the middle of July" (1928, 15 on Mission Bay, Pearson 1928b) and 23 July (1977, one in the Tijuana River Valley). Mid to late August marks the peak of fall migration. Wintering birds depart mostly in late March, and 9 April (1978, 10 at Lake Henshaw, P. Unitt) is the latest recorded date for birds which probably did not remain to summer.

A few pintails may be found in summer both along the coast and inland, such as six at San Elijo Lagoon on 6 July 1974 (SEL surv.), four in the Tijuana River Valley on 5 June 1978, and five at Lake Cuyamaca on 25 June 1978 (P. Unitt). Abbott's (1928a) report of "many hundred sprig hatched and raised" at Lake Henshaw in 1926, and "not ...more than 40 nests" in 1927 is the only early account of local breeding; the species no longer nests at Lake Henshaw. The only recent observations of breeding activity have been of broods of chicks at the Santa Margarita River mouth on 16 June 1973 (A. Fries) and 28 June 1974 (AB 28:948, 1974). A nest with eggs was being incubated from 9 to 29 May 1978 in the salt works at the south end of San Diego Bay, but the eggs failed to hatch (P. Unitt).

BLUE-WINGED TEAL

Anas discors Linnaeus

Rare winter visitor, uncommon spring migrant, rare in summer, status in fall not definitely known. The Blue-winged Teal occurs occasionally in winter on lagoons, ponds, and lakes near the coast. It is usually seen singly at this season (one at Whalen Lake on 1 January 1977; one in the Tijuana River Valley on 26 December 1966, G. McCaskie; one at Batiquitos Lagoon on 31 December 1977, J. Butler), but a remarkably high count of 12 was made at the Tijuana River mouth on 20 December 1980 (A. Helbig, P. Unitt). The only San Diego County specimen known to me was collected in the Sweetwater Valley at National City on 10 December 1943 (LACM 20575). The species becomes more widespread and numerous during spring migration, occurring on inland lakes (one at Lake Henshaw on 16 March 1975, G. McCaskie; one at Lake Cuyamaca on 30 April 1978, P. Unitt) as well as along the coast. Maximum numbers for spring are 10 at Bonita on 17 February 1962 (G. McCaskie) and 10 in the Tijuana River Valley on 15 April 1978 (E. Copper). Spring migration usually extends from late January to late April, with stragglers very rarely remaining to mid-May (one at the San Dieguito River mouth 8-15 May 1978, P. Unitt; one at Lower Otay Lake on 19 May 1963, G. McCaskie).

Blue-winged Teal have been observed on several occasions during June and early July at Buena Vista and San Elijo lagoons and at the San Dieguito River mouth, with a maximum of four at San Elijo Lagoon on 1 June 1975 (SEL surv.). One in the Tijuana River Valley on 23 July 1977 (P. Unitt) was probably a fall migrant which had not yet completed its prebasic molt. Although there are no records between 23 July and 7 October, the species undoubtedly occurs during that period to some extent, but goes unnoticed because of its extreme similarity in eclipse plumage to Cinnamon Teal. The report of nine at Coronado on 7 October 1961 (AFN 16:73, 1962) suggests that fall migrants may occur in appreciable numbers. See discussion under Cinnamon Teal for further comments.

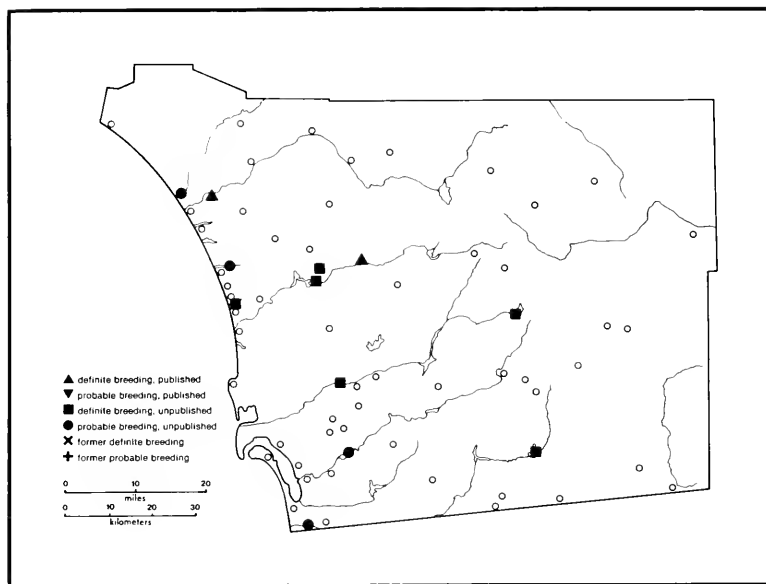
Hybrid male Blue-winged x Cinnamon Teal have been seen at least seven times in San Diego County between 21 January (1976, one at Santee Lakes, AB 30:765, 1976) and 4 May (1963, one at the south end of San Diego Bay, G. McCaskie).

Subspecies: The Atlantic coast breeding population has been described as a distinct race, but the species is now usually considered monotypic.

CINNAMON TEAL

Anas cyanoptera septentrionalium Snyder and Lumsden

Fairly common winter visitor, very common to abundant spring migrant, uncommon to fairly common summer resident, common to very common fall migrant. Wintering Cinnamon Teal are restricted to lagoons, ponds, and lakes in the coastal lowland. Typical counts for winter are 12 at San Elijo Lagoon on 5 January 1975 (SEL surv.) and eight



MAP 11. Breeding Distribution of Cinnamon Teal (*Anas cyanoptera*)

at Santee Lakes on 10 January 1978 (P. Unitt), but in occasional years larger numbers occur, up to 60 at the Tijuana River mouth on 20 December 1980 (A. Helbig). The species is most abundant and widespread during spring migration, mid-January to early May. It is abundant at times on San Diego Bay, where it does not winter (175 at Shelter Island on 15 January 1975, J. Dunn), as well as along the coast and on inland lakes (920 at San Elijo Lagoon on 2 February 1975, SEL surv.; 300 in the Tijuana River Valley on 4 March 1978; 500 at Lake Henshaw on 1 April 1978, G. McCaskie). Migrating flocks may even be seen offshore, such as eight observed 11 km (7 miles) off La Jolla on 21 February 1978 (D. Povey). There are six reports in the ABDSP file of Cinnamon Teal in the desert from January to May.

Cinnamon Teal occur in summer on lagoons and lakes throughout the coastal slope. No San Diego County egg sets of the species are preserved in WF, but Sharp (1907) found eggs at San Pasqual from 18 April to 13 May. Cooper (1880) collected a female with an egg in its oviduct near San Luis Rey on 22 June 1861, and G. McCaskie found a nest with eggs at Lake Cuyamaca on 25 June 1978.

Fall migration takes place mainly from late July to mid-October, when the species occurs in the same areas as in spring, but in smaller numbers (five at the south end of San Diego Bay on 14 August 1978; 75 at Batiquitos Lagoon on 18 August 1978; 100 at Lake Cuyamaca on 29 July 1978, P. Unitt). During the fall, while Cinnamon Teal are in eclipse

plumage, some proportion of nearly identically appearing eclipse-plumaged Blue-winged Teal are likely to occur with them. Nothing is known of the ratio between the two species in fall, since no specimens of either have been collected in the county at this season. Phillips (1975) warned of the danger of assuming that the Cinnamon Teal is more common in fall simply because it is more common in spring.

NORTHERN SHOVELER

Anas clypeata Linnaeus

Abundant migrant and winter visitor, rare in summer, with one record of probable breeding. Shovelers are widespread on the coastal slope, occurring most abundantly on lagoons and lakes in the lowland. They are usually only uncommon to fairly common on salt water. Limited information from foothill and mountain lakes indicates shovelers are common there as fall migrants and winter visitors, and become abundant in spring migration, beginning by early February. Fall migration begins in mid-August, with 14 August 1977, three at the Santa Margarita River mouth, J. Dunn being the earliest known date for non-summering individuals. Large numbers arrive by late August, as indicated by 150 and 200 at Batiquitos Lagoon on 26 and 30 August 1978, respectively (P. Unitt). Some examples of concentrations of wintering birds and spring migrants are: 3000 at Batiquitos Lagoon on 28 December 1980 (M. Evans), 1500 at Windmill Lake on the same date (H. A. Wier), and 1000 at Lake Henshaw on 1 April 1978 (G. McCaskie). Numbers

decline rapidly during April, and individuals linger only rarely into the first week of May; 8 May (1978, one at Batiquitos Lagoon) is the latest that a probable migrant has been seen.

Shovelers are noted rarely along the coast in summer, such as two at San Elijo Lagoon on 22 May and 6 June 1978, and three at Batiquitos Lagoon on 23 June 1978 (P. Unitt). A. Fries' observation of five ducklings following an adult shoveler in the Santa Margarita River Valley at Camp Margarita on 6 June 1978 is the only indication that nesting has occurred in San Diego County.

CANVASBACK

Aythya valisineria (Wilson)

Fairly common to common winter visitor, most numerous on inland lakes and on the lagoons of northern San Diego County. Some records which indicate the distribution and maximum abundance of Canvasbacks are: 96 at Buena Vista Lagoon on 31 December 1977 (M. Evans), 60 at Sweetwater Reservoir on 18 December 1976 (W. T. Everett), 30 at Guajome Lake on 27 November 1978, 500 at Lake Henshaw on 2 February 1978 (P. Unitt), and 100 at Lake Cuyamaca on 4 February 1968 (G. McCaskie). They are rare on the salt water of Mission and San Diego bays (one on Mission Bay on 19 December 1975, J. Dunn).

Canvasbacks arrive in numbers in early November, with 4 November (1973, 59 at San Elijo Lagoon, SEL surv.; 1933, Lake Morena, SD 19042) being the earliest record for the species. In spring, the last migrants depart in early April (7 April 1974, three at San Elijo Lagoon, SEL surv.; 9 April 1978, one at Lake Henshaw, P. Unitt). An exceptionally late straggler was at Lake Cuyamaca on 16 May 1964 (G. McCaskie).

REDHEAD

Aythya americana (Eyton)

Uncommon to fairly common winter visitor, uncommon and localized breeding resident. Redheads are widespread on lagoons and lakes throughout the coastal slope, but are almost always uncommon except on Buena Vista, Batiquitos, and San Elijo lagoons. Some exceptionally high winter counts for these areas are 76 at San Elijo Lagoon on 5 January 1975 (SEL surv.) and 208 at Batiquitos Lagoon on 31 December 1977 (J. Butler). Elsewhere along the coast, 50 at the San Diego River mouth on 22 November 1963 (G. McCaskie) was an exceptional concentration; more typical are eight on the Otay River in Otay on 23 February 1975 (J. Dunn), and nine at the Santa Margarita River mouth on 1 January 1977 (E. Copper). In the foothills and mountains, the Redhead is rare, with observations such as two at Lake Cuyamaca on 30 March 1974 (J. Dunn) and two at Lake Henshaw on 18 November 1978 (P. Unitt). The timing of migration of this species is poorly understood; extreme dates away from summering localities are 29 October (1979, one on south San Diego Bay, B. Cord) and

30 March (record for Lake Cuyamaca cited above), but these may not be representative.

Breeding localities are "San Luis Rey Valley" (probably Guajome Lake), set of eggs taken on 11 May 1933 (J. B. Dixon in Willett 1933), Guajome Lake, set of eggs taken on 11 May 1936 (WF), Santa Margarita River mouth, Buena Vista Lagoon, Batiquitos Lagoon, San Elijo Lagoon, and Los Peñasquitos Lagoon (AFN 19:577, 1965). A. Fries has seen broods of ducklings on several occasions at each of the last five localities, on dates extending from 24 May to 27 August. High counts at breeding localities in summer are 15 at Batiquitos Lagoon on 16 June 1978 (P. Unitt) and 19 at San Elijo Lagoon on 2 June 1974 (SEL surv.).

RING-NECKED DUCK

Aythya collaris (Donovan)

Common to very common winter visitor to ponds and lakes on the coastal slope. By far the greatest numbers occur at Lake Cuyamaca: 300 on 22 April 1967 (AFN 21:540, 1967), 300 on 4 February 1968 (AFN 22: 477, 1968), 200 on 30 March 1974 (J. Dunn). A sample of observations from other localities is: 25 at Guajome Lake on 27 November 1978, 75 at Wilderness Gardens on 19 February 1978, 40 at Sweetwater Reservoir on 2 December 1978, and 10 at Lake Henshaw on 5 November 1978 (P. Unitt). The species is rare on brackish lagoons (four at Buena Vista Lagoon on 31 December 1977, M. Evans) and it has not been reported from salt water.

Ring-necked Ducks may arrive occasionally as early in the fall as mid or late September (12 September 1969, two at Wilderness Gardens, E. Beemer; 27 September 1975, one at Otay Mesa, J. Dunn), but do not become numerous until early November. In spring, the species remains unusually late for a waterfowl, to mid-May (18 May 1968, 10 at Lake Cuyamaca, G. McCaskie), and exceptionally even to early June (6 June 1971, one at Wilderness Gardens, E. Beemer; 8 June 1974, one on the San Diego River 1.6 km [1 mile] east of Old Mission Dam, P. Unitt).

The species is casual in summer, with two reports: one in the Tijuana River Valley on 13 August 1978 (G. McCaskie), and two through the summer of 1980 at Lake Hodges (AB 34:930, 1980).

GREATER SCAUP

Aythya marila (Linnaeus)

Rare winter visitor to bays, lagoons, and estuaries. Some representative observations are two at Agua Hedionda Lagoon on 2 January 1978, six at Mission Bay on 26 December 1977 (G. McCaskie), and five at San Diego Bay on 17 December 1977 (P. Lehman). The only reports of Greater Scaups on fresh water are one on the lower Otay River on 17 December 1977 (G. McCaskie), and two at Santee Lakes 10 January - 2 February 1978 (J. Dunn), but this species is probably often overlooked among the abundant Lesser Scaups.

The earliest dates recorded for Greater Scaups in San Diego County are 5 November (1977, one at Border Field State Park, L. Bevier) and 9 November (1906, one at National City, Willett 1912). Spring departure is probably completed by late March in most years, but in 1978, a year of apparently exceptional abundance, the species remained on San Diego Bay to 16 April (six, P. Unitt) and at the San Diego River mouth as late as 19 May (four, AB 32:1054, 1978). The only other record of late stragglers is two on San Diego Bay on 30 May 1963 (AFN 17:434, 1963). Other than these instances, 21 March (1977, three on San Diego Bay, E. Copper) is the latest known date. The only San Diego County specimen (south San Diego Bay saltworks, 13 January 1968, SD 36420) was preserved as a skeleton.

Subspecies: *A. m. nearctica* Stejneger, the name applied to North American Greater Scaups, is now considered a synonym of *A. m. mariloides* (Vigors) of northeastern Siberia.

LESSER SCAUP

Aythya affinis (Eyton)

Abundant winter visitor, very rare in summer. Lesser Scaups are most abundant on San Diego Bay, with estimates as high as 9000 on 15 December 1979 (I. MacGregor) and 6500 on 20 December 1975 (J. V. Remsen). They are very common elsewhere in estuaries and lagoons along the coast and on lakes and ponds inland on the coastal slope. Some records which illustrate the distribution and abundance of the species are: 61 at Buena Vista Lagoon on 31 December 1977 (M. Evans), 250 at Santee Lakes on 10 January 1978, 100 at Lake Henshaw on 21 January 1978 (P. Unitt), and seven at Palomar Mountain on 6 April 1977 (E. Beemer). In the Anza-Borrego the only reports are of spring migrants grounded near Vallecito in early April 1966, and at Angelina Spring in Grapevine Canyon on 3 April 1966 (Banks 1967).

The first fall migrants may arrive in early October (three on San Diego Bay on 4 October 1977, J. Dunn), but the major influx starts in late October. Most spring migrants have departed by late April, with a few still remaining in early May (two on San Diego Bay, 3–5 May 1978). The very limited available data suggest large numbers of spring migrants stop on inland lakes: 100 at Lake Henshaw on 18 March 1978 (P. Unitt). Summering individuals have been noted a few times along the coast, such as one on San Diego Bay 5 July – 2 August 1964 (G. McCaskie), one at Roseville on 24 May 1931 (SD 14595), one at the San Diego River mouth on 30 June 1978 (C. Edwards), and two at Agua Hedionda Lagoon on 13 June 1978 (A. Fries).

HARLEQUIN DUCK

Histrionicus histrionicus (Linnaeus)

Casual winter visitor, four records: one on San Diego Bay in November 1953 (AFN 8:268, 1954), one at Coronado 23 December 1962 – 18 March 1963 (AFN 17:358, 1963), one at San Diego Bay on 2 January 1966 (AFN 20:378, 1966), and one continuously present at Agua Hedionda

Lagoon from 31 December 1977 (AB 32:875, 1978) through December 1981.

OLDSQUAW

Clangula hyemalis (Linnaeus)

Rare winter visitor, casual in summer, occurring primarily on San Diego and Mission bays. In some years, several individuals are found on San Diego Bay (five on 3 January 1960, AFN 14:270, 1960; four on 15 December 1973, AB 28:536, 1974; five on 16 December 1978, AB 33:667, 1979). In other winters, however, such as 1971–1972 and 1977–1978, the Oldsquaw is not reported in the county at all. There are only seven reports of single individuals from other localities: La Jolla, 25 January 1958 (SD 30070, Morley and Sams 1958); Buena Vista Lagoon, 1 February 1964 (AFN 18:387, 1964); Imperial Beach Pier, 6–13 February 1971; Tijuana River mouth, 28 March 1971 (AB 25:627, 1971); San Dieguito River mouth, 19 April 1976 (AB 30:889, 1976); Oceanside, 1 November 1979; and La Jolla, 9 November 1979 (AB 34:200, 1980).

The earliest Oldsquaws arrive in early November, with 1 November (Oceanside, cited above) and 2 November (1921, Mission Bay, SD 2263, Anthony 1922a) being the earliest dates. Most depart by the end of March, with the bird at Del Mar on 19 April being quite late. The six records of summer stragglers all are of single individuals which were sick or in poor plumage condition seen on San Diego Bay: 20–21 June 1937 (Helmuth 1939), 2–24 September 1966 (AFN 21:77, 1967), 6 May 1967 (AFN 21:540, 1967), April – May 1974 (AB 28:852, 1974), 11 July – 10 October 1976 (AB 30:1003, 1976; 31:222, 1977), and 25 June 1980 (AB 34:930, 1980).

BLACK SCOTER

Melanitta nigra americana (Swainson)

Rare and irregular winter visitor, accidental in summer. Black Scoters are found most often on San Diego Bay, but their numbers vary considerably from year to year. Several may occur in a single winter such as 1967–1968 (eight on 23 December 1967, AFN 22:394, 1968) or 1968–1969 (seven on 21 December 1968, AFN 23:424, 1969), but in other years, such as 1974–1975 and 1975–1976, none reaches San Diego County. The species occurs very rarely on other bodies of salt water along the coast (one at the Oceanside harbor on 10 November 1969, AFN 24:100, 1970; one at Agua Hedionda Lagoon on 20 February 1978, J. Dunn; one in the Tijuana River estuary, 25–28 January 1978, AB 32:399, 1978) and on the ocean near shore (one off Carlsbad on 12 January 1968, A. Fries; one at La Jolla on 12 March 1969; one to three at the Imperial Beach pier from 22 December 1968 to 1 February 1969, AFN 23:520, 1969). It is quite possible that the numbers of Black Scoters reaching San Diego County have declined during the last 20 years, as has certainly been the case with Surf Scoters and White-winged Scoters. Nevertheless, reports of larger numbers during the 1950s (up to 17 at Silver Strand State

Beach on 26 December 1954, AFN 9:286, 1955) may be questioned, since Black Scoters are so often confused with Surf Scoters, and had been recorded only once in San Diego County prior to 1954.

Black Scoters occur from early November to late March, and exceptionally to mid-April. The early extreme dates are 3 November (1963, one on San Diego Bay, AFN 18:73, 1964) and 4 November (1978, one on San Diego Bay, AB 33:312, 1979); the latest dates are 16 April (1978, one on San Diego Bay, P. Unitt) and 18 April (1928, two at Coronado, Helmuth 1939). A report of two on San Diego Bay from 21 June to 24 July 1962 (AFN 16:507, 1962) is the only summer record of correctly identified Black Scoters; Hubbs' (1956) report of one at San Elijo Lagoon on 4 July 1956 undoubtedly involves a misidentified Surf Scoter, mentioning as it does that "the conspicuous protuberance on the basal half of its bill was unusually light (whitish-yellow instead of orange-yellow)."

Subspecies: No specimens, but adult males are identifiable in the field as the North American and east Siberian race *M. n. americana*. The entire yellow base of the bill distinguishes *americana* from the western and central Eurasian *M. n. nigra* (Linnaeus), in which the males have the basal knob mostly black.

SURF SCOTER

Melanitta perspicillata (Linnaeus)

Abundant winter visitor; fairly common to common in summer. Surf Scoters occur in greatest abundance on San Diego Bay, where about 30,000 individuals wintered annually during the early to mid-1960s. Numbers have declined somewhat since then, but the species still remains very abundant (12,500 on the San Diego Christmas Bird Count, 16 December 1978, AB 33:667, 1979). Elsewhere on salt water along the coast, and on the ocean within a few miles of shore, the species is common to very common in winter (90 at Agua Hedionda Lagoon on 22 December 1979, A. Helbig; 125 at La Jolla on 10 February 1978, P. Unitt), and reaches abundant status during migration.

Migration periods are difficult to define because so many individuals linger through the summer. Surf Scoters arrive in fall in the last few days of October, with 25 October (1964, G. McCaskie) and possibly 20 October (1976, 20 along the Silver Strand, J. Dunn) being the earliest dates. In spring the birds depart mostly during April and early May, with a few possibly still moving north in mid-May (300 still on San Diego Bay on 16 May 1978, P. Unitt). Summering birds may be found all along the coast of San Diego County, but are most numerous on San Diego Bay. The highest numbers recorded in summer are 85 at Border Field State Park on 15 August 1974 (J. Dunn), and 85 on San Diego Bay on 5 and 26 June 1978 (P. Unitt).

Like Brant, Surf Scoters wintering in the Gulf of California cross over San Diego County on their spring migration from the Gulf of California to the Pacific Ocean, and recent observations suggest that flocks stop each year on lakes

Henshaw or Cuyamaca. Substantial numbers have been noted on several occasions, with maxima of 83 and 49 from 22 to 24 March 1979 and from 2 to 9 April 1981 respectively at Lake Henshaw (AB 33:805, 1979; R. Higson), and 75 at Lake Cuyamaca on 26 March 1967 (AFN 21:457, 1967). Also, Surf Scoters are forced down very rarely by exhaustion or bad weather onto the Anza-Borrego Desert or east slope of the mountains where there are reports from La Puerta (=Mason Valley (Stephens 1922), Banner Canyon (Harrison 1936), Jacumba (Sams and Stott 1959), Borrego Valley, Scissors Crossing, Vallecito (Banks 1967), and Arroyo Tapiado (ABDSP file). Dates of inland records extend from 4 March (1980, Lake Henshaw, AB 34:815, 1980) to 6 May (1978, 20 at Lake Cuyamaca, AB 32:1054, 1978).

WHITE-WINGED SCOTER

Melanitta fusca deglandi (Bonaparte)

Irregularly rare to fairly common winter visitor; formerly common to abundant in winter and rare in summer. White-winged Scoters frequent the same habitats as Surf Scoters, and like them, are most numerous on San Diego Bay. Numbers reaching San Diego County fluctuate considerably from year to year. During the 1970s, a count of as many as 10 individuals in a day on San Diego Bay was unusual in most years, but a much greater influx occurred during the winter 1979-1980, with 170 counted on 15 December 1979 (AB 34: 663, 1980). At other places along the coast White-winged Scoters are usually rare, with numbers such as three seen about 1 km off Oceanside on 31 December 1977 (D. Povey) and two at La Jolla on 10 February 1978 (J. Dunn) being typical, and 25 at the Santa Margarita River mouth on 22 December 1979 (E. Copper) being high. This species has declined dramatically in recent years. Stephens (1919a) called it a "common winter resident," and Sefton (1939) reported about 500 on San Diego Bay on 11 November 1938. San Diego Christmas Bird Counts recorded maxima of 2000 on 3 January 1960 (AFN 14:270, 1960) and 200 on 2 January 1961 (AFN 15:288, 1961).

Since 1965, extreme dates for White-winged Scoter are 18 October (1969, three on San Diego Bay, J. Dunn) and 30 October (1971, one on San Diego Bay, G. McCaskie); 6 April (1978, one at Oceanside, A. Fries) and 9 April (1978, one at Silver Strand State Beach, B. Cord). In earlier years, individuals would linger into late May (24 May 1931, Roseville, SD 14596; 24-26 May 1963, San Diego Bay, G. McCaskie), and Stephens (1919a) wrote "a few non-breeding birds remain through summer." Specific summer records are: San Diego Bay, 20 June and 5 July 1964 (G. McCaskie); same locality, one through summer 1968 (AFN 22:648, 1968); and one at the Imperial Beach pier on 23 August 1970 (G. McCaskie).

Subspecies: The Pacific Coast population, *M. d. dixonii* (Brooks), is now considered the same subspecies as *M. deglandi* from east of the Rocky Mountains, while *deglandi* is also considered conspecific with the Old World form *M. fusca* (Linnaeus).

COMMON GOLDENEYE

Bucephala clangula americana (Bonaparte)

Uncommon to fairly common winter visitor; casual in summer. Goldeneyes occur in numbers only on San Diego Bay; they are rare elsewhere along the coast, and on ponds and lakes inland on the coastal slope. Some records indicating the maximum abundance of the Common Goldeneye on San Diego Bay are: 60 on 29 December 1956 (AFN 11:231, 1957), 94 on 31 December 1961 (AFN 16:289, 1962), 50 during the winter 1962-1963 (AFN 17:358, 1963), 34 on 20 December 1975 (AB 29:610, 1976), and 28 on 16 December 1978 (AB 33:667, 1979). The species usually occurs in smaller numbers, however, and it has declined somewhat since 1963. Four specimens in SD taken at Mission Bay from 1919 to 1928, before the bay was developed, suggest that the Common Goldeneye occurred regularly at that locality, where it is now rare. A representative sample of the few records away from San Diego and Mission bays is: one at Batiquitos Lagoon on 8 February 1971 (A. Fries), one at Cardiff on 13 January 1958 (SD 30069), four on the lower Otay River on 4 December 1976 (J. Dunn), two at Santee Lakes on 8 February 1978 (P. Unitt), one at Mesa Grande on 27 February 1977 (A. Fries), and 10 at Lake Cuyamaca on 4 February 1968 (G. McCaskie).

The earliest Common Goldeneyes normally arrive in mid-November. The earliest precise dates recorded are 9 November (1962, three on San Diego Bay, AFN 17:67, 1963) and 11 November (1928, Mission Bay, SD 12311; and 1932, San Diego Bay, SD 16138). However, a specimen from Mission Bay (SD 2168) is labelled "October 1919" with no more exact information. Migrants depart by mid-March, with 15 March (1977, 18 on San Diego Bay, J. Dunn) and 18 March (1923, near the Tijuana River mouth, SD 8555) being the latest dates. The three records of summer stragglers are: one on San Diego Bay on 6 June 1963 (AFN 17:434, 1963), one on San Diego Bay on 4 June and 12 August 1967 (G. McCaskie), and one at the Santa Margarita River mouth on 21 August 1973 (A. Fries).

BARROW'S GOLDENEYE

Bucephala islandica (Gmelin)

Casual winter visitor, four sight records. One was seen at Otay on 7 March 1964 (McCaskie and Banks 1966), one was in San Diego Bay along the Silver Strand 15-20 February 1975 (AB 29: 741, 1975), one was at the south end of San Diego Bay on 7 January 1979, and possibly the same individual was seen at this locality on 9 March 1979 (AB 33:312, 1979).

BUFFLEHEAD

Bucephala albeola (Linnaeus)

Very common winter visitor, very rare in summer. Buffleheads frequent bays, lagoons, and estuaries along the coast, and ponds and lakes throughout the coastal slope. Some typical numbers and localities are 90 at Agua Hedionda Lagoon on 22 December 1979, 300 on south San

Diego Bay on 20 December 1980 (A. Helbig, 250 at Whalen Lake on 18 February 1978, 40 at Santee Lakes on 28 January 1978, 30 at Lake Henshaw on 2 February and 18 March 1978 (P. Unitt), and 10 at Lake Cuyamaca on 29 March 1975 (G. McCaskie).

Though Cooper (from Willett 1912) and Sams and Stott (1959) state that Buffleheads arrive in October, I can find no specific date earlier than 25 October (1981, two at the San Diego River mouth, P. Unitt), and the species does not become common until early November. In spring most migrants depart from late March to mid-April; very few are left by late April, and there are only two reports as late as early May: five at the south end of San Diego Bay on 2 May 1975 (J. Dunn), and four at San Elijo Lagoon on 4 May 1975 (SEL surv.). Summer stragglers have been found on six occasions: Sweetwater Reservoir, 30 May 1960 (AFN 14:421, 1960), Lower Otay Lake, 24 August 1975 (P. Unitt), Tijuana River Valley, 18-20 September 1977 (J. Dunn), south end of San Diego Bay, 2 September 1978 (G. McCaskie) and 26 July 1979, and Batiquitos Lagoon, 15 July 1979 (AB 33:896, 1979).

HOODED MERGANSER

Mergus cucullatus (Linnaeus)

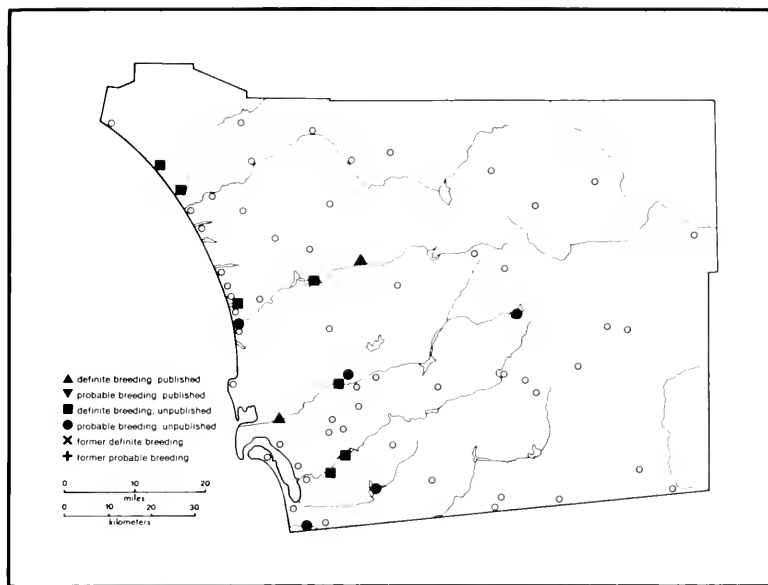
Rare winter visitor to ponds and lakes in the coastal lowland. This species is usually seen singly or in twos or threes; maximum numbers are up to eight at Bonita from 20 February to 30 March 1962 (AFN 16:364, 1962), seven at the same locality on 23 December 1963 (AFN 17:358, 1963), and five at O'Neill Lake on 23 January 1976 (AB 30:765, 1976). Some typical reports are two in Sorrento Valley on 15 November 1964, two at Santee Lakes on 19 January 1977 (G. McCaskie), and one at Squires Pond, Carlsbad, on 1 January 1977 (C. Edwards). The Hooded Merganser has been recorded once in the foothill zone, at Warner Springs, where one was shot on 15 November 1922 (Huey 1924). It is casual on salt water: two in the Oceanside harbor on 23 December 1969 (AFN 24:539, 1970); one at the San Diego River mouth from 8 to 11 December 1972 (G. McCaskie). The report of two at Mission Bay on 4 May 1955 (AFN 9:359, 1955) must be questioned since it combines exceptional habitat with an exceptionally late date. The only specimen in the SD collection was taken at Sweetwater Reservoir on 5 December 1942 (Harbison 1943); Abbott (1928c) reported a specimen also from this locality taken on 4 December 1927.

November through March is the normal season for Hooded Mergansers. Extreme dates are 25 October (1975, two at Otay Mesa, AB 30:126, 1976) and 30 March (1962, cited above), except for a remarkably late individual at Santee Lakes on 28 May 1977 (AB 31:1041, 1977).

COMMON MERGANSER

Mergus mergamser americanus (Cassin)

Irregularly uncommon to very common winter visitor to fresh water lakes throughout the coastal slope. Large

MAP 12. Breeding Distribution of Ruddy Duck (*Oxyura jamaicensis*)

numbers of Common Mergansers have been recorded only at Lake Henshaw, with up to 80 on 3 February 1974, 150 on 17 January 1975 (J. Dunn), and 150 on 4 January 1980 (AB 34:306, 1980). Such concentrations do not occur every year, but often smaller flocks can be found on the lake. Only scattered individuals or occasional small groups are encountered at other localities, such as 16 at Squires Pond, Carlsbad, on 1 January 1977 (C. Edwards), four at Lake Wohlford on 11 December 1969 (A. Fries), and five at Santee Lakes on 23 February 1975 (J. Dunn). The species is rare on brackish or salt water along the coast. Typical of the few coastal records are: one at Solana Beach on 18 December 1932 (SD 16152), one at Mission Bay on 21 December 1975 (G. McCaskie), one to two at the San Diego River mouth from 22 February to 17 March 1968 (AFN 22:477, 1968), and three at the south end of San Diego Bay from 6 to 20 December 1975 (J. Dunn). Common Mergansers have been recorded in San Diego County from mid-November to mid-March, with 12 November (1978, 10 at Lake Henshaw, D. Povey) and 16 March (1975, 75 at Lake Henshaw, G. McCaskie) being the extreme dates.

RED-BREASTED MERGANSER

Mergus serrator Linnaeus

Common winter visitor, uncommon in summer. Red-breasted Mergansers are most numerous on San Diego Bay, occur fairly commonly on the ocean just beyond the breaking waves, and are uncommon on lagoons and estuaries.

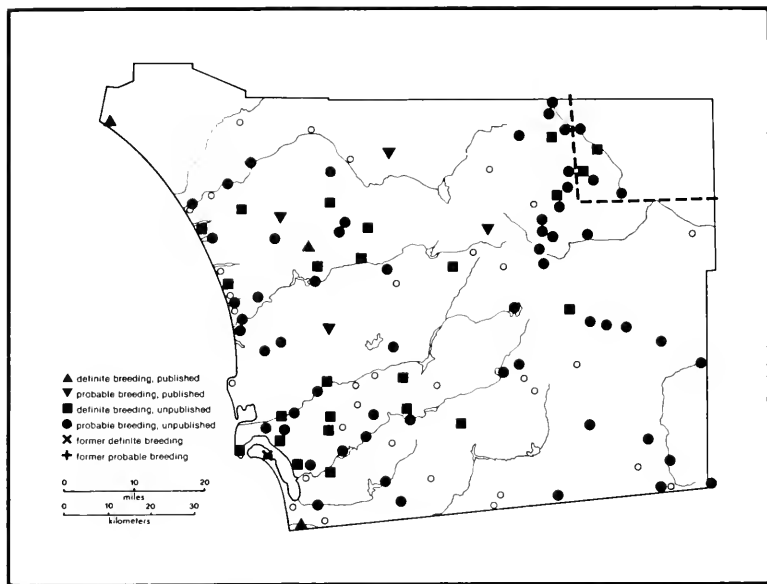
Some typical numbers are: 67 on San Diego Bay on 17 December 1977 (D. Povey), 15 at Point Loma on 20 December 1980 (C. Edwards), eight at San Elijo Lagoon on 5 January 1975 (SEL surv.) and 15 at Agua Hedionda Lagoon on 31 December 1977 (J. Bishop). Although Sams and Stott (1959) said the species occurred "less numerously on fresh water" [than on salt], implying some regularity, I can find only three definite inland records: one at Otay Mesa on 10 October 1973 (J. Dunn), one at Sutherland Reservoir in January 1977 (SD 40229, skeleton), and 12 at Lake Henshaw on 8 April 1981 (R. Higson).

Very little information is available on the timing of migration of Red-breasted Mergansers, but apparently the earliest fall migrants arrive in early October (15 on San Diego Bay on 4 October 1978) and the latest spring migrants depart in mid-April (10 at the San Diego River mouth on 10 April 1978). Summering birds are found in small numbers on sheltered salt water the length of the San Diego County coastline, with up to nine at the Tijuana River mouth on 14 August 1978 (P. Unitt).

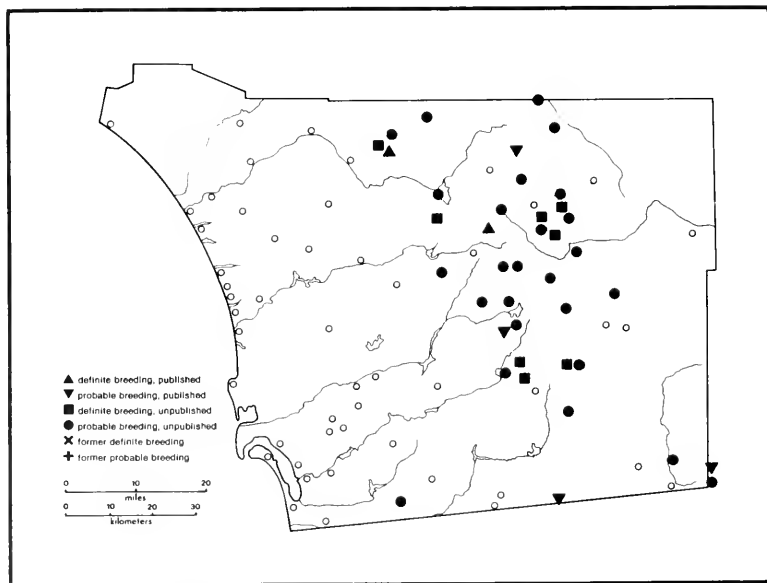
RUDDY DUCK

Oxyura jamaicensis rubida (Wilson)

Very common to abundant migrant and winter visitor, locally common summer resident. Ruddy Ducks visit any body of fresh or salt water that is deep enough to accommodate their diving habits. They are very widespread along the coast, on the coastal slope, and have occurred even in the



MAP 13. Breeding Distribution of California Quail (*Callipepla californica*), southwest of the dashed line, and Gambel's Quail (*C. gambeli*) to the northeast.



MAP 14. Breeding Distribution of Mountain Quail (*Callipepla picta*)

Anza-Borrego Desert (Borrego Springs, 8 October 1969, SD 37377; three reports in ABDSP file). The schedule of Ruddy Duck migration is poorly known since many individuals are in the county at all times of the year. Large numbers of fall migrants arrive in October and November and remain into winter (700 at Whalen Lake on 28 December 1980, G. McCaskie; 457 at the south end of San Diego Bay on 20 December 1980, M. Evans). The greatest concentrations are seen during spring migration from February to April (980 at San Elijo Lagoon on 6 April 1975, SEL surv.; 2000 at Lake Henshaw on 1 April 1978, G. McCaskie). Some numbers seen in summer are: 21 at San Elijo Lagoon on 1 June 1975 (SEL surv.), 60 at the Santa Margarita River mouth on 28 June 1977, and 75 at Lake Cuyamaca on 29 July 1978 (P. Unitt).

Ruddy Ducks breed in dense marsh vegetation fringing brackish lagoons or fresh-water lakes. For such a common bird, surprisingly little information is available on its nesting in San Diego County. Only two egg sets from the county are held at WF, collected on 2 and 19 May. Sharp (1907) reported "nearly hatched" eggs on 5 June. The breeding season is undoubtedly more protracted than these dates indicate, since male Ruddy Ducks begin their courtship displays by late February, and downy chicks are still accompanying their parents in mid-August (Santa Margarita River mouth, 18 August, 1978, P. Unitt).

Quails etc.

Family Phasianidae

CALIFORNIA QUAIL

Callipepla californica californica (Shaw)

Common to very common resident in broken chaparral, grassy edges of chaparral or woodland, orchards, and dense desert and semi-desert scrub. The largest numbers may be seen around water sources in dry areas, such as 400 at Peña Spring on 10 September 1976 (P. Unitt). California Quail are widespread on the coastal slope, and occur on the eastern slopes of the mountains down to their bases. They extend some distance out into the Anza-Borrego Desert in southeastern San Diego County, but are absent from the floor of the Borrego Valley. The easternmost localities known for the species are Santa Catarina Spring (40 in October 1961, ABDSP file), the mouth of Borrego Palm Canyon (18 on 21 April 1979, C. Edwards), Yaqui Well (common, e.g., 20 on 5 November 1978, P. Unitt; specimen on 30 April 1966, SD 35999), Agua Caliente Springs (common, e.g., 30 on 29 January 1977, J. Dunn), Palm Spring (two on 2 April 1978, P. Unitt), Carrizo Marsh (two coveys on 24 March 1974, P. Jorgensen), 6 km (4 miles) north of Jacumba (14 December 1944, SD 31074), and south of In-ko-pah County Park in extreme southwestern Imperial County (two on 10 April 1976, G. McCaskie). California Quail are seldom found in the mountain zone,

and Cuyamaca Lake, at 1400 m (4600 feet) (two on 25 June 1978, P. Unitt) and Volcan Mountain, "altitude about 5000 feet [1520 m]" (large flocks all winter, W. O. Emerson, in Belding 1890) are the highest elevations where the species has been reported in San Diego County.

Egg dates (54), 9 April – 6 July. Belding (1890) noted "two broods of young about a week old" on 3 April 1885, while F. E. Blaisdell (in Belding 1890) reported that his "last set of fresh eggs was taken August 14," and "also noticed some small quails about November 1." California Quail evidently enjoy a very long breeding season, at least in some years.

GAMBEL'S QUAIL

Callipepla gambelii gambelii (Gambel)

Fairly common to common resident within a very limited range. The Gambel's Quail is restricted in San Diego County to the mesquite thickets, orchards, and agricultural fields of the Borrego Valley, where it was first reported by Abbott (1928a). The species occurs west to the mouth of Borrego Palm Canyon (eight on 21 April 1979, C. Edwards) where it meets California Quail, and north to the "lower willows" on Coyote Creek (six on 7 May 1978, S. Goldwasser). The statement by Sams and Stott (1959) that the Gambel's Quail ranges "from Yaqui Well to Collins Valley" is erroneous; California Quail, not Gambel's, occurs at Yaqui Well. The quail inhabiting Coyote Creek Canyon (including Collins Valley) should be investigated critically, since a contact between the two species probably occurs somewhere in this canyon. Bancroft's (1924) record of a Gambel's Quail trapped in Balboa Park on 18 September 1924 undoubtedly involved a bird that had been released or escaped from captivity.

A female collected at the Beatty Ranch in the Borrego Valley on 13 April 1930 (SD 12718) is labeled as incubating. A. Morley noted eight young at Borrego Palm Canyon Campground on 21 April 1974.

MOUNTAIN QUAIL

Callipepla picta eremophila (van Rossem)

Fairly common resident in chaparral, uncommon in piñon-juniper woodland, desert-edge scrub, and mixed coniferous woodland. Usually single males are heard calling, often from the tops of exposed rocks, or small coveys are seen, but Emerson (1887) noted "a bevy of forty or more" at Volcan Mountain in January 1884. Mountain Quail occur throughout the mountains of San Diego County, down on the coastal slope to about 790 m (2600 feet) elevation. Some localities on the western edge of the species' range are Oak Grove (five on 14 April 1979, G. McCaskie), "hills rimming Pauma Valley," ("calls regularly in spring," E. Beemer), Mesa Grande (two egg sets in WF), Ballena (18 August 1889, SD 239–40), Cedar Creek on west slope of Cuyamaca Mountains (10 on 4 February 1978, P. Unitt), Descanso (one on 25 April 1976, J. Dunn), and Otay Mountain (one

on 18 June 1980, D. Povey). On the desert slope, Mountain Quail have been recorded down to 700 m (2300 feet) at Mountain Springs, just across the line in southwestern Imperial County (24 March 1909, MVZ 8066-7). Other localities where the species occurs on the edge of the desert are Alder Canyon (18 May 1974), Peña Spring (February 1959), Big Spring in Tubb Canyon (31 March 1974, ABDSP file), the north base of Whale Peak in the Vallecito Mountains (three on 15 April 1978, C. Edwards), La Puerta (=Mason) Valley (10 February and 16 May 1923, SD 2637-40) and 6 km (4 miles) north of Jacumba (14 December 1944, SD 31149-53).

Egg dates (6), 7-29 May; a female with egg in oviduct was collected at Guatay on 13 April 1934 (SD 16524).

Cranes

Family *Gruidae*

SANDHILL CRANE

Grus canadensis (Linnaeus) subsp.?

Now accidental, with only one recent observation: seven at Cuyamaca Lake 24-30 September 1977 (AB 32:257, 1978). The species was apparently a regular migrant during the nineteenth century. Emerson (1887) saw large flocks flying over Volcan Mountain on 16 and 20 March 1884. Grinnell, Bryant, and Storer (1918) reported that at Campo "many flocks have been seen passing high overhead in a southeasterly direction which would have led them to the head of the Gulf of California, where the species is known to winter abundantly. In early spring flocks have been noted traversing the same course in reverse direction." Stephens (1919a) wrote "The cranes migrate in considerable flocks in fall and spring, often without stopping in the country. Occasional in winter on grass or grain fields." No more specific information was ever published. Sams and Stott (1959) report Sandhill Cranes "seen at Sweetwater Lake and Lower Otay in December," but these were probably misidentified Great Blue Herons.

Subspecies: Not known due to lack of specimens; both *G. c. canadensis* (Linnaeus) and *G. c. tabida* (Peters) are possible, and both have been collected in Imperial County. Nominate *canadensis* breeds in Alaska and arctic Canada, *tabida* in southern Canada and in the western and central United States; both races are highly migratory.

Rails

Family *Rallidae*

BLACK RAIL

Laterallus jamaicensis coturniculus (Ridgway)

Now extirpated, formerly an uncommon resident. Black Rails inhabited the tidal salt marshes around San Diego Bay, and were best known in the marsh at the mouth of

the Sweetwater River. Ingersoll (1909) estimated 30 pairs at this locality in 1908, while Willett (1933) wrote: "during some seasons [E. E. Sechrist] estimated breeding population of twenty-five to thirty pairs, [but] during other seasons he was unable to locate the species at all." Small populations were probably resident also at Mission Bay, where one was collected on 22 June 1908, and in the Tijuana River Estuary, where one was collected in November 1908 (Stephens 1909). In northern San Diego County, nesting was documented only at Los Peñasquitos Lagoon (28 May 1952, WF). Stephens (1909) reported a specimen from Encinitas on 8 December 1886 (SD 148), which was probably shot at nearby San Elijo or Batiquitos lagoons. Egg dates (39), 12 March - 9 June. Early records of migrants or wanderers are one killed by flying against the lighthouse on Point Loma on 4 August 1876 (Grinnell et al. 1918), and another "picked up...near the towers of the U. S. Naval Radio Station just east of San Diego" (near the present Chollas Reservoir) on 30 August 1929 (Gander 1930b, SD 12710).

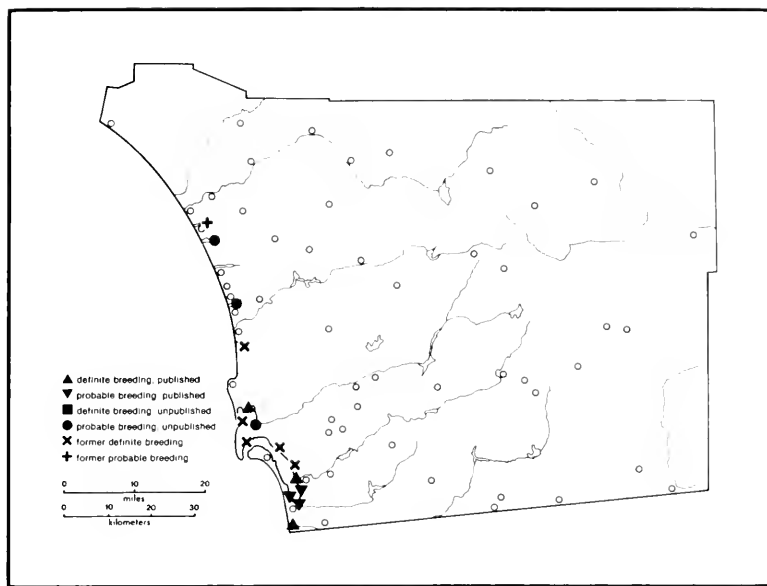
Destruction and degradation of salt marsh habitat resulted in the extinction of the coastal breeding population of Black Rails during the 1950s. The most recent nest found in San Diego County was taken on 25 May 1955 (SBCM). Since that time, migrants or winter visitors have been observed on seven occasions: once at the south end of San Diego Bay, on 29 February 1964, twice at fresh water in the Tijuana River Valley, on 24 April 1965 and 5 September 1966 (G. McCaskie), and four times at San Elijo Lagoon, on 11 November 1963 (AFN 18:73, 1964), 17 January 1964 (G. McCaskie), 15 November 1969, and 28 October 1973 (A. Fries).

Most recently, Black Rails were discovered to occur uncommonly, at least in summer, at Carrizo Marsh in the bed of Carrizo Creek on the Imperial County line (six to ten on 18 and 19 May 1974, P. Jorgensen; six on 8 June 1974, AB 28:949, 1974; four on 9 September 1974, P. Jorgensen; four on 27 June 1976, AB 30:1003, 1976). The small amount of marsh habitat at this locality was destroyed in September 1976 by hurricane Kathleen, and no Black Rails have been observed there since. Tamarisk trees are dominating the vegetative recovery of Carrizo Marsh, so the Black Rail may be unable to reestablish itself in San Diego County.

CLAPPER RAIL

Rallus longirostris levipes Bangs

Uncommon and very localized resident in tidal salt marshes that support a good growth of the grass *Spartina foliosa*. The status of Clapper Rail in San Diego County has been monitored closely since 1973 by P. Jorgensen (Wilbur 1974, Wilbur et al. 1979, and pers. comm.) and R. L. Zembal (pers. comm.) and the following discussion is based on their investigations. Clapper Rails were formerly much more common in San Diego County than they are in the 1980s; their



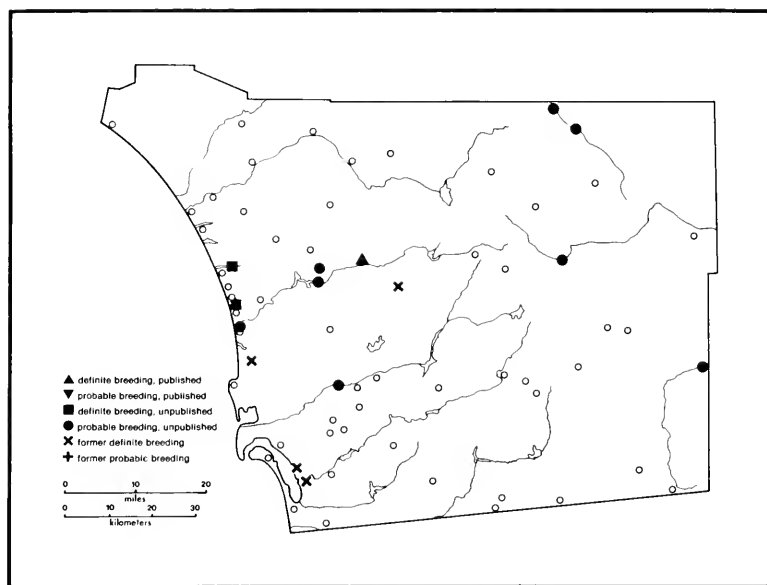
MAP 15. Breeding Distribution of Clapper Rail (*Rallus longirostris*)

range and numbers have been greatly reduced by destruction and degradation of salt marsh habitat. The largest population persists in the estuary of the Tijuana River. In December 1977, Jorgensen counted 99 birds there during a tide so high that he believed virtually all the population was forced out of the marsh and censused. Zembal estimated 26 and 31 pairs there in 1980 and 1981, respectively, based on counts of calling birds in spring, while Jorgensen located 17 and 21 actual nests during those same years. Around south San Diego Bay, Zembal's 1981 census revealed three pairs in the Marine Biology Study Area reserve at the south end of the Silver Strand, four pairs in the Otay River mouth slough, one pair each at the J Street, F Street, and E Street marshes, five pairs in the Sweetwater River mouth marsh, and two pairs in the adjacent Paradise Creek marsh. Jorgensen estimated only five individuals at all these San Diego Bay localities combined in November and December 1977, but suspected some population interchange between San Diego Bay and the Tijuana River estuary (Wilbur et al. 1979). Apparently a few birds intermittently occupy the San Diego River flood control channel; three pairs were detected there on 1 May 1981, where none had been reported since 1972. At the Kendall-Frost marsh reserve on the east side of Crown Point in Mission Bay, Zembal counted 18 calling pairs in 1980, and 16 pairs on 12 April 1981, while Jorgensen's count during high tides revealed 12 individuals in November 1977, 24 on 22 November 1980, and 19 on 13 November 1981.

Mission and San Diego bays were originally major centers of the Clapper Rail population of southern California.

At Los Peñasquitos Lagoon, T. Meyer reported at least 100 Clapper Rails in 1968 (*vide* Jorgensen), and J. LaGrange found five nests in 1972, but repeated searches there from 1974 to 1981 have been unsuccessful, so the species must have been extirpated from this locality. At San Elijo Lagoon, one was noted on 13 May 1947, and three were reported in 1972, but Clapper Rails were absent there from 1973 to 1976. By 1981, the rails had recolonized this lagoon, as indicated by ten individuals on 24 May and 19 June. At Agua Hedionda Lagoon, one bird was heard calling in 1976, and one and two pairs were detected in 1980 and 1981 respectively. A few Clapper Rails formerly inhabited Buena Vista Lagoon, but the construction of a shopping center destroyed their habitat, and no birds have been found there since 1972. These are all the localities in San Diego County where the species is known or suspected to have nested. However, populations at some other localities on the north coast might have been extirpated before their existence was documented. Egg dates (39), 6 March – 23 May; Jorgensen has found active nests with eggs in the Tijuana River estuary as late as 15 July 1979.

Census results from 1973 through 1981 indicate the total San Diego County population size fluctuates between about 55 and 75 pairs. The total population of the Light-footed Clapper Rail (*R. l. levipes*) in California was 173 pairs in 1981 (R. L. Zembal and B. W. Massey). Since the rest of



MAP 16. Breeding distribution of Virginia Rail (*Rallus limicola*)

the Light-footed Clapper Rails north of the Mexican border are restricted to only three localities (Upper Newport and Anaheim bays, Orange County; Carpinteria Marsh, Santa Barbara County). San Diego County is obviously extremely important to this subspecies. Substantial numbers of Clapper Rails still occur at El Estero de Punta Banda (near Ensenada) and at the Bahía de San Quintín in northwestern Baja California; Zembal and Massey estimated a population of 800 pairs at the two localities combined in April 1981. However, the subspecific relationships of these birds are not positively known. No specimens have been reported from El Estero de Punta Banda; van Rossem (1947) identified two winter specimens from San Quintín, one as *leripes*, but the other as the darker-backed race *R. l. magdalenae* van Rossem. On this slender basis, he believed "that *magdalenae* is the resident form at San Quintín, with *leripes* present as a winter casual." While the situation in Baja California obviously requires further investigation, it is clear that survival of *R. l. leripes* requires continued conservation efforts in southern California. Colonization of San Elijo Lagoon and the San Diego River mouth indicates the birds can adapt to habitat dominated by *Typha* and *Scirpus* where *Spartina* is absent. However, reliance on these marginally suitable situations can in no way substitute for preservation and restoration of the tidal marshes of Los Peñasquitos Lagoon, Mission and south San Diego bays, the Sweetwater River mouth, and especially, the Tijuana River estuary.

VIRGINIA RAIL

Rallus limicola limicola Vieillot

Uncommon to fairly common winter visitor, uncommon and localized summer resident. Virginia Rails occur primarily in fresh-water and brackish marshes along the coast and in the coastal lowland. They visit tidal salt marshes as well during migration and winter. Some numbers and localities which illustrate the abundance and range of non-breeding birds are: 17 at San Elijo Lagoon on 4 November 1973 (SEL surv.), eight in the San Luis Rey River Valley, Oceanside, on 3 January 1976, and four in the Tijuana River Valley on 20 December 1975 (P. Unitt). The species has also been found in three areas on the east side of the mountains: Coyote Creek Canyon (three and two at Lower Willows on 29 March 1980 and 1 June 1980, respectively, A. Morley; "young reported" at Middle Willows on 5 May 1974, ABDSP file), San Felipe Creek from 1 km northwest of Scissors Crossing to upper Sentenac Canyon (22 March 1895, SD 150; eight on 3 May 1978; 25 on 16 September 1978, and Carrizo Marsh (12 on 9 September 1974; seven on 4 May 1978, P. Jorgensen). The timing of Virginia Rail migrations is poorly known because the birds are so difficult to census accurately in their marsh habitat, and they possibly remain through the summer and breed at most localities where they occur in winter. The present limited information suggests that most migrants arrive in August and September and depart in April.

Virginia Rails have definitely nested at San Pasqual

("found nesting in 1900 and 1902," Sharp 1907; eggs collected on 4 May 1900, WF; 18 heard calling in response to taped recordings on 26 July 1980, K. Weaver), near Ramona ("old bird with several young" seen on 2 June 1888, A. M. Ingersoll in Willett 1912), National City (egg sets collected on 9 April 1932 and 11 April 1935), Chula Vista (two sets on 26 April 1923), Sorrento (one set on 20 May 1949, WF and SBCM), and Batiquitos Lagoon (chick seen with adults on 5 July 1978, AB 32:1208, 1978). An immature specimen from Del Mar on 5 August 1975 (SD 39643) suggests local breeding also, though the bird had already fledged. In addition, the species has been seen during May, June, and July at San Elijo Lagoon (two on 5 May 1974, one on 6 July 1975, SEL surv; one on 19 June 1981, P. Jorgensen), Kit Carson Park (two pairs through spring 1980, seen carrying nest material, Weaver 1981), east Lake Hodges (nine counted at three spots, 3 and 10 July 1981, K. Weaver), and 1 km east of Old Mission Dam (occurs regularly, such as one on 19 May 1973, P. Unitt).

SORA

Porzana carolina (Linnaeus)

Fairly common migrant and winter visitor, very rare summer resident. Soras are found in both fresh and salt marshes along coast and in the coastal lowland, in numbers such as 38 at San Elijo Lagoon on 2 March 1975 (SEL surv.), 12 in the San Luis Rey River Valley, Oceanside, on 28 December 1980 (J. Oldenettel), six at Bonita on 16 December 1978 (L. Santaella), and 26 in the Tijuana River estuary on 12 December 1981 (P. Jorgensen). The species occurs also in the Anza-Borrego Desert at Lower Willows in Coyote Creek Canyon (one on 14 January and 10 February 1981, A. Morley), at Scissors Crossing (nine on 3 May 1978) and at the Carrizo Marsh (12 on 9 September 1974, six on 4 May 1978, P. Jorgensen). Seasonally, Soras occur in San Diego County primarily from late August through late April, but their migration schedule needs further study; it is possible that birds found in April and early May actually breed locally but escape detection later in the spring by becoming silent and secretive. Extreme dates for probable migrants are 7 August (1951, Hillsdale near El Cajon, SD 31214) and 20 August (1978, three at Batiquitos Lagoon, P. Unitt) in fall, 5 May (1974, 13 at San Elijo Lagoon, SEL surv.) and 6 May (1978, five at Carrizo Marsh, P. Unitt) in spring. The only published account of the Sora breeding in San Diego County is Sharp's (1907) statement that "for several years a pair has nested in nearly the same locality on the river below Escondido. Each year the nest was discovered before the clutch of eggs was complete and on going back a few days later the nest was always empty." No dates were mentioned. No Sora eggs from the county are preserved in WF, but in SBCM is a set (19154) collected at National City on 20 April 1935, and another (19155) from "San Diego County," without more precise locality, on 4 May 1954. A. M. Ingersoll (in Willett 1912)

believed Soras bred occasionally in the "vicinity of San Diego," and Stephens (1919a) made the vague statement "occasional throughout the year." Recent summer reports are from the Tijuana River Valley (five on 2 July 1978, D. Herron), Lake Hodges (one adult on 26 July 1980, two adults and one immature on 1 August 1980), and San Pasqual (one heard calling on 26 July 1980 and 10 July 1981, K. Weaver).

PURPLE GALLINULE

Porphyrio martinicus (Linnaeus)

Accidental, one record (the only record for California). One was found in a residential area of Point Loma on 1 October 1961 (Huey 1962, SD 30289). Purple Gallinules breed in western Mexico north at least to Nayarit, range north to Sonora, and very rarely, to southeastern Arizona.

COMMON GALLINULE

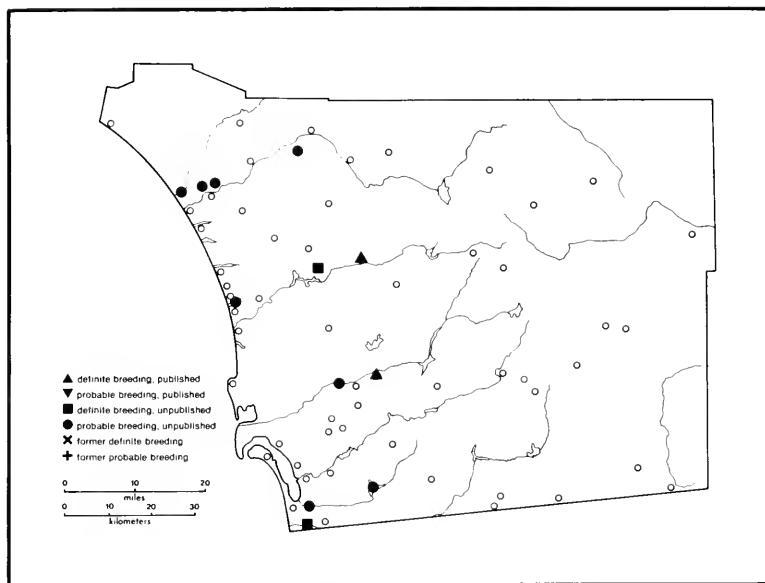
Gallinula chloropus cachimans Bangs

Uncommon to fairly common resident. Common Gallinules occur primarily at fresh-water ponds and marshes in the coastal lowland, and in smaller numbers at the brackish lagoons of northern San Diego County. Some typical numbers are: 10 at the Santa Margarita River mouth on 1 January 1979, 12 in the Tijuana River Valley on 16 December 1978 (E. Copper), three at San Elijo Lagoon on 3 November 1979 (SEL surv.), six in the San Luis Rey River Valley, Oceanside, on 28 December 1980 (J. Oldenettel) and five at Santee Lakes on 26 November 1978 (P. Unitt). Egg dates (7), 15–27 May; chicks have been seen following adults as late as 23 July. Seasonal variations in the distribution and abundance of Common Gallinule in San Diego County, if any, have never been studied.

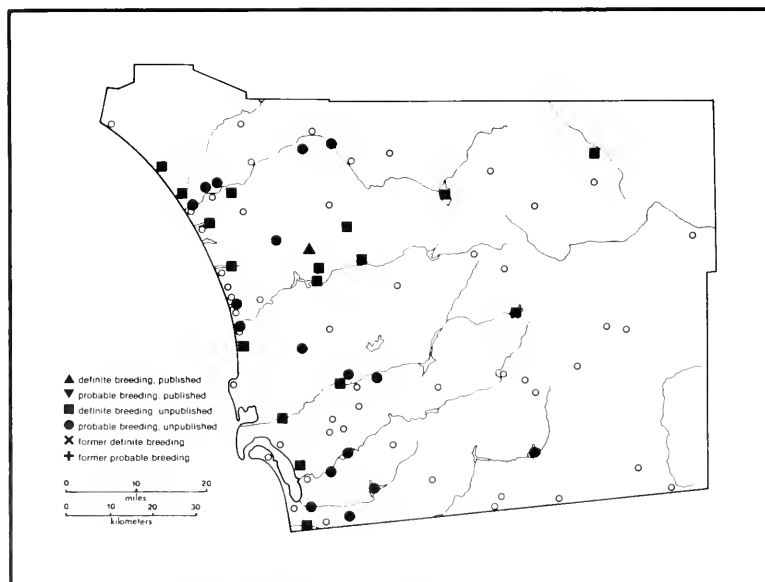
AMERICAN COOT

Fulica americana americana Gmelin

Common summer resident, abundant migrant and winter visitor. Coots occur throughout the coastal slope of San Diego County on lakes and lagoons. They are rare migrants or visitors to the Anza-Borrego Desert at least from October to March. Numbers such as 1420 at San Elijo Lagoon on 2 March 1975 (SEL surv.), 2000 at Batiquitos Lagoon on 6 October 1978, 500 at Whalen Lake on 18 February 1978, 2500 at Lake Henshaw on 18 March and 5 November 1978, and 300 at Lake Cuyamaca on 29 July 1978 illustrate their abundance in migration and winter. Some estimates during the breeding season are 30 (including 10 chicks) at the Santa Margarita River mouth on 23 June 1978, 50 (including 15 chicks) at Batiquitos Lagoon on 5 July 1978, and 50 at Lake Cuyamaca on 25 June 1978 (P. Unitt). Three young were accompanying adults at Oso Ranch in the Borrego Valley on 19 May 1974 (ABDSP file). Egg dates (22),



MAP 17. Breeding Distribution of Common Gallinule (*Gallinula chloropus*)



MAP 18. Breeding Distribution of American Coot (*Fulica americana*)

22 April – 1 July. Non-breeders also visit the salt water of Mission and San Diego bays (91 on north San Diego Bay on 20 December 1980, E. J. McNeil). The migration schedule of the American Coot is not precisely known, but fall migrants probably arrive in late July, August, and September, while spring departure takes place largely in April.

Oystercatchers

Family *Haematopodidae*

AMERICAN OYSTERCATCHER

Haematopus (ostralegus) palliatus frazari Brewster

Accidental, two records. One was collected at "San Diego" on 16 May 1862 (MVZ 4488), and another was seen at Point Loma 20–21 April 1978 (AB 32:1055, 1978). Johnsgard (1981) considered both the American and Black Oystercatchers conspecific with *H. ostralegus* of the Old World, but also wrote "the specific and subspecific relationships of *Haematopus* are extremely complex and have yet to be thoroughly worked out."

BLACK OYSTERCATCHER

Haematopus (ostralegus) bachmani Audubon

Very rare winter visitor to the rocky shoreline on the west side of Point Loma. Two or three individuals have been found annually at this locality since 1977, between 15 September (1979, AB 34:201, 1980) and 29 April (1978, AB 32:1055, 1978). Single individuals were noted there also on 7 and 8 October 1972 (AB 27:121, 1973) and 9 September 1974 (C. Edwards). Away from Point Loma, the only recent report is of three at Imperial Beach on 24 September 1980 (AB 35:226, 1981). Stephens (1919a) called the species an "uncommon resident of rocky seashores and islands," but there is only one definite early record for the county, of a specimen collected at Coronado on 2 June 1915 (SD 20645). The Black Oystercatcher is still a fairly common resident on Los Coronados Islands (Jehl 1977).

Avocets and Stilts

Family *Recurvirostridae*

BLACK-NECKED STILT

Himantopus (himantopus) mexicanus mexicanus (Müller)

Very common to abundant fall migrant, fairly common to common winter visitor, common to very common spring migrant and summer resident. Stilts occur at coastal lagoons and estuaries, and at ponds and lakes in the coastal lowland; they are rare around tidal salt water except at the south end of San Diego Bay, where they are abundant. The species is more numerous during the fall than at other seasons, as indicated by 350 at Batiquitos Lagoon on 21 August 1976

(A. Fries) and 300 in the Tijuana River Valley on 1 August 1978. It is fairly common farther inland in the lowland zone (15 at Lake Hodges on 4 September 1978, P. Unitt), but there is only one fall record for the foothills or mountains (Ballena, 6 September 1889, SD 167). More information is needed on the timing of stilt movements, but fall migrants probably begin arriving in mid-July, are most abundant in August, and then decline in numbers during September and October. During the winter, stilts are much less common than in fall at most localities (34 at Batiquitos Lagoon on 3 January 1976, R. Higson; 46 at San Elijo Lagoon on 3 February 1976, SEL surv.; 15 at Santee Lakes on 26 January 1976, J. Dunn; four at Lower Otay Lake on 26 November 1978, P. Unitt). However, they remain abundant in the saltworks at the south end of San Diego Bay (377 on 16 December 1978, R. Copper).

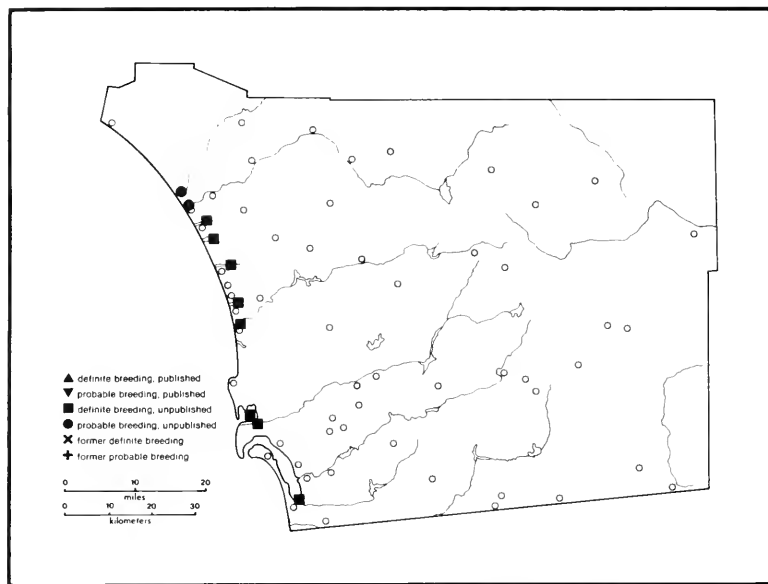
In spring, numbers of stilts increase again along the coast during March and April. Cooper (1874) reported seeing a flock in the Cuyamaca Mountains on 30 April 1862. There does not seem to be a definite peak of spring migration, as there is in fall. Localities where stilts are known to have nested are Buena Vista Lagoon (nest found on 2 May 1978, W. G. Lehmann), Agua Hedionda Lagoon (two egg sets collected "one mile south of Carlsbad" on 30 May 1945, WF: "30 or 40 nests" noted "near Carlsbad" on 18 May 1931), San Luis Rey Valley ("several" nests noted on 18 May 1931, J. B. Dixon in Willett 1933), Batiquitos Lagoon (six chicks seen on 5 July 1978, P. Unitt), the San Diego River mouth (chicks seen on 4 June 1978, R. A. Erickson), and the Tijuana River Valley (two chicks seen on 5 June 1978). The largest colony is in the south San Diego Bay saltworks. M. Evans counted 51 nests there in 1974; this total may include some re-nesting attempts. He found only 12 nests in late May 1977, so the population size may change considerably from year to year. Fifty to 75 birds, and nests with eggs were observed weekly from 28 April to 27 June 1978 (P. Unitt). Some stilts undoubtedly nest as well at the Santa Margarita River mouth (126 birds seen on 12 June 1972, A. Fries) and at San Elijo Lagoon (148 on 1 June 1975, SEL surv.). K. Weaver has seen the species at Lake Hodges and San Pasqual in every month of the year, and has noted fledged juvenals beginning in early July, but has not yet found any nests or chicks.

Subspecies: A trinomial is used for this species since the forms *H. melanurus* Vieillot of South America and *H. knudseni* Stejneger of Hawaii are considered conspecific with *mexicanus*. Johnsgard (1981) considered that all the stilts of this genus form one cosmopolitan species, *H. himantopus*.

AMERICAN AVOCET

Recurvirostra americana Gmelin

Very common spring and fall migrant, common to very common winter visitor, common to very common in summer, with some birds breeding. The habitat preferences of



MAP 19. Breeding Distribution of American Avocet (*Recurvirostra americana*)

American Avocet are similar to those of Black-necked Stilt, and the two species are often seen at the same places, though they do not flock together. Avocets are found at lagoons and estuaries all along the coast, with the Santa Margarita River mouth (120 on 16 July 1971, A. Fries), Bati-quitos Lagoon (186 on 22 December 1979, M. Evans), San Elijo Lagoon (553 on 4 March 1974, SEL surv.), and the saltworks at the south end of San Diego Bay (290 on 16 December 1978, R. Copper) being especially favorable localities. During migration and winter, they are also fairly common on ponds and lakeshores in the coastal lowland (18 at Talone Lake on 22 December 1979, F. Dexter; 25 at Lake Hodges on 30 November 1978, P. Unitt; one at Otay Reservoir on 28 September 1975, SD 39655). The species is regular in fall migration at Lake Henshaw, occurring at least from 22 August (1971, G. McCaskie) to 18 November (15 in 1978, P. Unitt). Three spring migrants were noted at Bow Willow Ranger Station in the Anza-Borrego Desert on 12 May 1974 (ABDSP file).

Seasonal variations in the abundance of avocets are still poorly understood. At the south end of San Diego Bay, they are uncommon from mid-April to early August. At San Elijo Lagoon, they tend to be less numerous from November to January, but wintering numbers vary wildly from year to year. Local movements caused by changing water levels may mask the evidence of large scale migrations.

Nesting American Avocets only recently have colonized San Diego County. The only records of breeding prior to 1970 are vague reports, with no dates, of "nesting reported by Mr. Morley at Carlsbad and San Diego Bay" (Sams and Stott 1959) and a "successful nesting season at San Diego Bay" (AFN 14; 477, 1960). By 1978, however, avocets were nesting in fair numbers at several places along the coast. Definitely known localities are Buena Vista Lagoon (one nest found on 2 May 1978, W. G. Lehmann), Agua Hedionda Lagoon (25 birds, four nests found on 2 May 1978), Bati-quitos Lagoon (chicks seen on 5 and 11 July 1978, P. Unitt; four nests on 8 May 1981, eggs collected and incubated, chicks raised at San Diego Zoo), San Elijo Lagoon (three broods of chicks seen on 5 August 1971, M. Evans; two nests found on 16 May 1978, P. Unitt), the San Dieguito River mouth (20 birds, copulating and building nests on 4 June 1972, M. Evans), and the San Diego River mouth (chicks seen in 1978, R.A. Erickson; birds on nests in early April 1979, D. Parker). The species probably nests as well at the Santa Margarita (35 birds, aggressive displays, on 8 May 1978, P. Unitt) and San Luis Rey River mouths (pair copulating on 7 May 1977, M. Evans). One brood was raised at the sludge beds on Fiesta Island, Mission Bay in 1977 (P. Jorgensen), and a week-old chick was in the south San Diego Bay saltworks on 30 July 1972 (M. Evans), but these last two are not regular nesting localities.

Plovers

Family Charadriidae

LESSER GOLDEN PLOVER

Pluvialis dominica (Müller) subsp.

Rare fall migrant and winter visitor, casual spring migrant. Golden Plovers occur most frequently in agricultural fields and on dry, sparsely vegetated ground near water, less often around the lagoons and on the edges of salt marshes. They avoid the tidal mudflats frequented by Black-bellied Plovers. Most records are for the Tijuana River valley and estuary, south San Diego Bay, and the San Diego River mouth, but the species has been reported once or twice each from most of the lagoons of northern San Diego County, and once from La Jolla (2-17 November 1933, Michael 1934). Inland records are of single individuals at Otay Mesa on 30 October 1971 (AB 26:121, 1972) and 2 October 1975 (G. McCaskie), and at Lake Hodges on 4 November 1979 (AB 34:201, 1980).

Lesser Golden Plovers are most numerous during fall migration from mid-September to late October. Seldom are more than three or four individuals seen together, but 12 were in the Tijuana River Valley on 17 October 1964, and 15 were at the same locality on 8 October 1966 (G. McCaskie). The earliest arrivals are one in the Tijuana River Valley on 26 July 1980 (AB 34:930, 1980) and one at the San Diego River mouth on 27 July 1969 (AFN 23:695, 1969). Often a very few remain through the winter. One to three individuals are usual for that season, with a maximum of six in the Tijuana River Valley December 1966-January 1967 (AFN 21:458, 1967) and in December 1968 (AFN 23:521, 1969). Most winter visitors depart by March, but a few have remained until late April, such as one at the San Diego River mouth to 27 April 1962 (AFN 16:447, 1962), and one in the Tijuana River Valley to 30 April 1965 (AFN 19:511, 1965). Some April records could represent either birds which wintered locally or migrants from farther south, such as six in the Tijuana River Valley 10-17 April 1966 (AFN 20: 546, 1966) and one at the Tijuana River mouth 22 and 27 April 1979 (S. Goldwasser, R. C. Smith). Three birds feeding on mudflats along the Silver Strand on 11 April 1964 (AFN 18:486, 1964) were certainly migrants. The only spring record later than the end of April is of one bird seen at the Tijuana River mouth on 14 May 1977 (AB 31:1047, 1977). The report from the Silver Strand on 14 July 1961 (AFN 16:74, 1962) may be in error.

Subspecies: Both races of *Pluvialis dominica*, nominate *dominica* and *P. d. fulva* (Gmelin), have been observed in San Diego County. The races differ most conspicuously in winter plumage, when *dominica* is plain gray-brown, while *fulva* is a brighter yellow-buff. *Dominica* is the more frequently occurring form in San Diego County, at least in fall, and the only specimen preserved (18 October 1972,

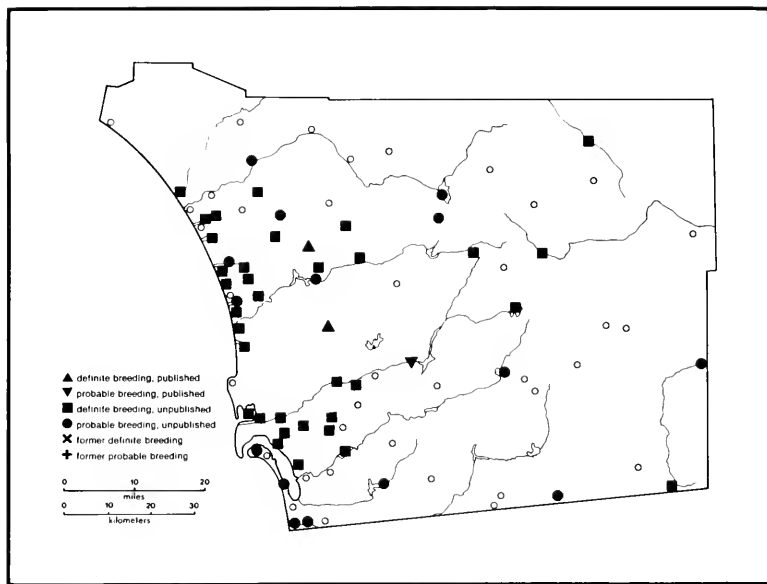
Tijuana River Valley, SD 38234) is of this race. Definite sight identifications of *fulva* are of one to two birds wintering regularly at the San Diego River mouth from 1962 to 1974, two at the Tijuana River mouth on 12 December 1972 (G. McCaskie), and one in the Tijuana River Valley from 27 November 1975 to 1 February 1976 (AB 30:125 and 765, 1976). One "very bright" individual seen on the shore of San Diego Bay at Coronado on 12 January 1908 (Torrey 1909) was probably *fulva* also. Garrett and Dunn (1981) suggest that *dominica* winters exclusively in South America, and that all Lesser Golden Plovers found in California in winter are *fulva*. The only specimen reported for the state between December and March (Bay Farm Island, Alameda County, 15 January 1922, Grinnell 1936) is *fulva*, but obviously more specimens are needed to establish conclusively the identity of the wintering population.

BLACK-BELLIED PLOVER

Pluvialis squatarola (Linnaeus)

Very common to abundant migrant and winter visitor, also locally common as a non-breeding summer visitor. Black-bellied Plovers are most abundant on mudflats, and occur in substantial numbers around lagoons, in salt marshes, on sandy beaches, and on rocky ocean shores. Large flocks also frequent agricultural fields, as in the San Luis Rey and Tijuana River valleys and on Otay Mesa. The species' status inland is poorly known; probably large numbers migrate overland over San Diego County, but normally do not stop until they reach the coast. Definite reports more than 10 miles from the coast are of single birds at Lake Henshaw 13 November 1977 (G. McCaskie) and at Lake Hodges 30 November - 2 December 1978 (E. Copper), and a flock of 184 at Lake Henshaw on 31 July 1981 (R. Higson).

At most places along the coast of San Diego County, the largest numbers occur during fall migration (118 at San Elijo Lagoon on 1 September 1974, SEL surv.; 100 at the Santa Margarita River mouth on 30 August 1978; 400 on the Silver Strand on 4 October 1978). As with the other species of shorebirds, more information is needed to determine the timing of Black-bellied Plover migration. Present limited evidence indicates that fall migration starts in mid-July (35 at the Santa Margarita River mouth on 19 July 1978, P. Unitt), and peaks from mid-August to early September. L. Miller (1936) noted the species' arrival at La Jolla on 22 July 1935. Large numbers remain to winter around San Diego Bay and at the Tijuana and San Diego River mouths (up to 700 on the east shore of the bay on 17 December 1977, B. Cord), but elsewhere the species is considerably less common (60 at San Elijo Lagoon on 12 December 1973, SEL surv.; 50 at Whalen Lake on 18 February 1978). There seems to be no definite peak of spring migration; wintering birds depart gradually through March, April, and May. A few individuals in breeding plumage may be seen as late as the end of May (latest recorded, one at south San Diego Bay on 29 May 1978, P. Unitt). In the Black-bellied



MAP 20. Breeding Distribution of Killdeer (*Charadrius vociferans*)

Plover, as in many other species of shorebirds, non-breeding individuals which remain in San Diego County through the summer are in their basic or winter plumage. Birds in breeding plumage are probably still migrating to or from their breeding range.

Summering Black-bellied Plovers are found in substantial numbers around San Diego Bay (100 on 5 July 1964, G. McCaskie), at the Tijuana River mouth (25 on 14 June 1978), and San Diego River mouth. At the north county lagoons, they summer irregularly and in small numbers (eight at the Santa Margarita River mouth on 28 June 1977, P. Unitt; nine at San Elijo Lagoon on 7 July 1974, SEL surv.)

MOUNTAIN PLOVER

Charadrius montanus (Townsend)

Common to very common but extremely localized winter visitor. Mountain Plovers are usually found in fields of bare plowed dirt, and in San Diego County are known to occur regularly only in the Tijuana River Valley. Flocks of up to 200 have been observed there, as on 5 and 11 November 1972 (G. McCaskie) and 18 December 1976 (AB 31:882, 1977). The species has also been found several times at Otay Mesa, with up to 75 on 19 January 1973 and 250 on 12 December 1971 (G. McCaskie). Records from other localities are so few they can all be listed here: eight at Stuart Mesa just north of the Santa Margarita River mouth on 22 December 1979 (E. Copper); two collected of 75 seen at

Kearney Mesa on 18 November 1939 (Abbott 1940a); two seen at the same locality on 17 November 1956 (AFN 11:61, 1957); five collected of 35 seen at Coronado Heights (the south end of the Silver Strand) on 1 January 1938 (Abbott 1940); 50 in Warner Valley near the intersection of highways 79 and S-2 on 18 December 1981, with 30 there on 29 December (C. Edwards); one at Lake Cuyamaca on 9 November 1980 (D. Parker); and three at Ocotillo Wells on 18 March 1978 (AB 32: 1055, 1978). Emerson (1887) reported "flocks" in the Santa Ysabel Valley on 3 April 1884, but the date is very late for the species, and no specimen was collected. Sams and Stott (1959) mentioned Mountain Plovers as occurring on "large lawns" at Pacific Beach, but do not provide any further details.

Mountain Plovers usually arrive in mid-October; the earliest observations are of 15 in the Tijuana River Valley on 20 September 1972, and three in the same area on 9 October 1966. Most of the birds leave by the end of January, and the latest record for the Tijuana River Valley is of three on 2 February 1962 (G. McCaskie). A. M. Rea saw some in a plowed field at San Luis Rey on 6 March 1960. The reports from Ocotillo Wells and Santa Ysabel are the only ones later in the spring.

KILLDEER

Charadrius vociferans vociferans Linnaeus

Very common resident, occupying a wide variety of habitats: agricultural fields, short grass and lawns, the margins of

lakes and lagoons, sandy or gravelly streambeds, and flat areas of bare dirt, sand, or gravel. Killdeer visit tidal mudflats and sandy beaches uncommonly, and rocky shorelines rarely (five on shore of Point Loma on 6 December 1978). The species is not restricted altitudinally or geographically in San Diego County, occurring in the mountains at Lake Cuyamaca (nest found on 14 April 1979, P. Unitt) and in the Anza Borrego Desert, as at El Vado (young in April 1981, ABDSP file), Vallecito (10 on 5 November 1978), and the Carrizo Marsh (two on 6 May 1978). The migratory habits of the Killdeer are not well known, but it is definitely more abundant in fall and winter than in spring and summer. Some high estimates are 145 in the San Luis Rey River Valley in Oceanside on 1 January 1977, and 150 in the Tijuana River Valley on 12 November 1977 (P. Unitt).

Killdeer nest generally in flat, open situations, often on sandy and pebbly ground where their mottled eggs are well camouflaged. Egg dates (42), 18 March – 10 June; an adult was incubating at Agua Hedionda Lagoon as late as 5 July 1978 (P. Unitt). Clearing of land for agriculture and the development of parks and golf courses have probably resulted in a considerable increase in the Killdeer population of San Diego County during this century.

WILSON'S PLOVER

Charadrius wilsonia beldingi (Ridgway)

Accidental, two records. One found at Pacific Beach on 24 June 1894 was collected on 29 June (Ingersoll 1895, Grinnell 1902, MVZ 31920). Ingersoll (1918) saw another at Imperial Beach on 11 May 1918. One reported on the San Diego Christmas Bird Count on 29 December 1956 (AFN 11:231, 1957) and three in Sorrento Valley on 19 April 1961 (AFN 15:43, 1961) were undoubtedly misidentified.

SEMPALMATED PLOVER

Charadrius semipalmatus Bonaparte

Common spring and fall migrant, fairly common winter visitor. Semipalmated Plovers are found on mudflats bordering lagoons, bays, and estuaries. The largest numbers are seen during fall migration, such as 289 at San Elijo Lagoon on 7 September 1980 (SEL surv.) and 60 at Agua Hedionda Lagoon on 9 August 1978. The earliest migrants arrive in late June (two at San Elijo Lagoon on 20 June 1977; 14 in the Tijuana River estuary on 29 June 1977; seven at Mission Bay on 29 June 1978, P. Unitt), but the species does not reach peak abundance until August. Semipalmated Plovers are considerably less numerous in winter; counts of 36 at Batiquitos Lagoon on 3 January 1976 (R. Higson) and 49 at the south end of San Diego Bay on 16 December 1978 (R. Copper) are high for that season. Spring migration lasts from March through May, and in some years, probably to early June (two at the Santa Margarita River mouth on 3 June 1972, A. Fries; 30 at the San Diego River mouth on 4 June 1978, R. A. Erickson; 17 at the Tijuana River

mouth on 7 June 1979; 25 at Batiquitos Lagoon on 9 June 1979, E. Copper). Semipalmated Plovers are not definitely known to remain continuously through June as summer stragglers that fail to migrate.

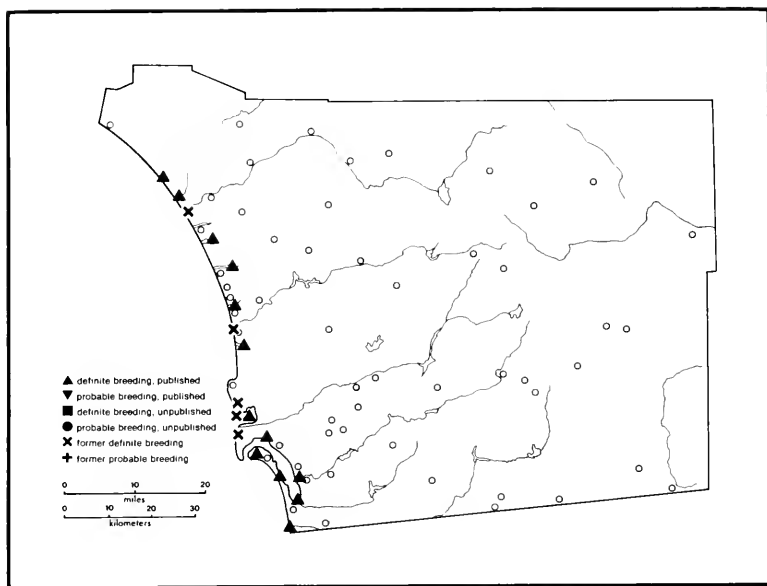
The species' status inland is very poorly known, but it occurs regularly in small numbers at Lake Hodges from at least late July to late November, with up to ten on 7 and 17 September 1978 (P. Unitt). A few were also noted at Lake Henshaw in 1978: one on 29 July; two on 12 August (G. McCaskie); one on 5 September (B. Cord). Grinnell et al. (1918) reported one at Julian on 16 April 1884.

SNOWY PLOVER

Charadrius alexandrinus nivosus (Cassin)

Common migrant and winter visitor, fairly common to common but localized breeding resident. Snowy Plovers occur primarily on sandy ocean beaches and around the drying margins of lagoons; smaller numbers visit tidal mudflats in migration and winter. They are generally most numerous during fall migration, with numbers such as 66 at San Elijo Lagoon on 1 August 1976 (SEL surv.), 45 at Agua Hedionda Lagoon on 9 August 1978, 50 at Batiquitos Lagoon on 18 August 1978, and 50 at the Tijuana River mouth on 27 August 1978 (P. Unitt). The only inland records are of fall migrants: single birds at Lake Henshaw on 5 November 1978 (AB 33:213, 1979) and at Lake Hodges on 5 August and 2 September 1979 (G. McCaskie, D. Parker). Stephens' (1919a) statement that the species is "occasionally found about fresh water lakes in summer" is not based on any presently available evidence. Late July to mid-September is the main season of Snowy Plover migration, but the Lake Henshaw record indicates birds are still moving in early November. Counts of 30 at the Tijuana River mouth on 27 December 1977 (P. Unitt) and 27 at San Elijo Lagoon on 2 February 1975 (SEL surv.) illustrate the species' abundance in winter. In spring, numbers of Snowy Plovers increase somewhat in March and April, but there is no well-marked peak of spring migration.

For nesting, Snowy Plovers resort to beach dunes at the Silver Strand and Santa Margarita and Tijuana River mouths, dried mudflats at the Sweetwater, Tijuana, and Santa Margarita River mouths and around Agua Hedionda, Batiquitos, San Elijo, and Los Peñasquitos Lagoons, and bare dirt dikes or fills around San Diego Bay in the saltworks, on the Silver Strand, and at the Sweetwater River mouth. L. E. Stenzel and S. C. Peaslee surveyed all Snowy Plover nesting habitat in San Diego County during May 1978 as part of an extensive study of the distribution and ecology of the species throughout California (Page and Stenzel 1981). They located 131 pairs as follows: Tijuana River mouth 19, Silver Strand beach 3, Silver Strand bay shore 3, Saltworks 16, Sweetwater River mouth 9, San Elijo Lagoon 12, Batiquitos Lagoon 3, Agua Hedionda Lagoon 27, Santa Margarita River mouth 37, French and Aliso Creek mouths 2. D. Parker located two pairs at Los Peñas-



MAP 21. Breeding Distribution of Snowy Plover (*Charadrius alexandrinus*)

quitos Lagoon later that same year. The distribution of nesting Snowy Plovers undoubtedly varies substantially from year to year with changing habitat conditions. Other sites used in recent years are North Island Naval Air Station and Lindbergh Field, where E. Copper and D. Parker found two and one nests respectively in 1979, and Mission Bay, where P. Jorgensen found one nest in 1977. Egg dates (63), 27 March - 10 July; a set of eggs was still being incubated on 2 August 1978 at Batiquitos Lagoon (P. Unitt).

Numbers of Snowy Plovers have decreased greatly during this century, as a result of human development and disturbance of coastal habitats. Stephens (1919a) considered the species "an abundant resident of sandy beaches near the surf," an evaluation that certainly does not hold true sixty years later.

Sandpipers

Family Scolopacidae

RUDDY TURNSTONE

Arenaria interpres (Linnaeus) subsp.?

Common to very common migrant and winter; fairly common as a non-breeding summer visitor on San Diego Bay. Ruddy Turnstones occur most numerous on the tidal mudflats around San Diego Bay, and prefer to forage in clumps of aquatic plants. Smaller numbers visit rocky ocean

shorelines and sandy beaches, especially where masses of kelp have washed ashore. During migration they may be seen occasionally in grass or agricultural fields close to salt water, such as 20 on a football field adjacent to the San Diego River mouth on 4 April 1965 (G. McCaskie) and four in the Tijuana River Valley on 12 September 1977 (J. Dunn). Away from San Diego Bay Ruddy Turnstones are at best fairly common, and along the coast of northern San Diego County they are uncommon to rare.

Unlike many other species of shorebirds, Ruddy Turnstones are not conspicuously more abundant during fall migration than in winter; rather, large concentrations have been noticed occasionally in spring: 300 on San Diego Bay on 5 May 1962 (G. McCaskie), and 500 there 25 April - 5 May 1963 (AFN 17:434, 1963). More typical numbers are five at Oceanside on 28 December 1980 (A. Fries), 38 at Point Loma on 20 December 1980 (C. Edwards), and 100 along the Silver Strand on 20 December 1980 (A. Helbig). Mid-August through mid-September is the main season of fall migration, with 26 July (1978, two at the Tijuana River mouth) being the earliest date known for definite migrants. Spring migration extends from at least late March through early May, and 9 May (1978, three at the south end of San Diego Bay) is the latest date for birds in definitive breeding plumage.

Substantial numbers of Ruddy Turnstones in winter or possibly first summer plumage remain through the summer each year around San Diego Bay, with a maximum of 50

on 29 June 1977 (P. Unitt). Elsewhere along the coast, Turnstones occur very rarely in midsummer, such as one at the Santa Margarita River mouth on 19 June 1972 (A. Fries) and two at San Elijo Lagoon on 1 June 1975 (SEL surv.).

Subspecies: Two races of Ruddy Turnstone are recognized, *A. i. morinella* (Linnaeus), breeding from northeastern Alaska east to the central Canadian Arctic, and nominate *interpres*, breeding from the eastern Canadian Arctic, east through Greenland and arctic regions of the Old World, to northwestern Alaska. Grinnell and Miller (1944) called California specimens *morinella*, while the A.O.U. Checklist (1957) called them *interpres*, saying of *morinella*, only "migrates in spring...rarely on the Pacific side." The races are apparently distinguishable only in breeding plumage, when *interpres* supposedly has more black, and less rufous, on the upperparts than has *morinella*. SD has too few specimens in breeding plumage to allow an adequate comparison between the two subspecies.

BLACK TURNSTONE

Arenaria melanocephala (Vigors)

Common migrant and winter visitor, rare through midsummer. Rocky ocean shorelines are Black Turnstone's characteristic habitat, but the birds also frequent artificial rock breakwaters, sandy beaches, and uncommonly, tidal mudflats. The species is strictly coastal in distribution. Some typical numbers are two at Agua Hedionda Lagoon on 31 December 1977 (J. Bishop), 10 at La Jolla on 27 April 1976 (J. Dunn), 30 at Mission Bay on 15 February 1978 (P. Unitt) and 37 at Point Loma on 16 December 1978 (C. Edwards).

The timing of Black Turnstone migration is very poorly understood and no large migratory concentrations have been recorded in either spring or autumn. In fall, the first migrants probably arrive in mid-July (10 on the Silver Strand on 10 July 1977, J. Dunn; 10 at the same locality on 16 July 1976, P. Unitt), and the species can be found regularly by the end of that month. In spring, most Black Turnstones have left by early or mid-May, but individuals in breeding plumage have been noted several times as late as late May and even early June: five at the Santa Margarita River mouth on 29 May 1972 (A. Fries), one at San Elijo Lagoon on 2 June 1974 (SEL surv.), two at the south end of San Diego Bay on 5 June 1978, and one at the Santa Margarita River mouth on 6 June 1978 (P. Unitt). A few non-breeding individuals remain through the summer: one at San Diego Bay 23-24 June 1967, one at the San Diego River mouth on 30 June 1968 (G. McCaskie), and one at San Elijo Lagoon on 3 July 1977 (J. Dunn).

SURFBIRD

Aphriza virgata (Gmelin)

Uncommon to fairly common fall migrant and winter visitor; fairly common to common spring migrant; casual in summer. Surfbirds are virtually restricted to rocky ocean

shorelines and artificial rock breakwaters. Rarely do they occur on tidal mudflats or sandy ocean beaches (where they feed on grunion eggs). La Jolla, Point Loma, and the jetties at the entrances to Mission and San Diego bays are the principal areas they visit in San Diego County. Although Surfbirds have been found at several other coastal points in the San Diego area, there are only three reports from the north county: six at San Onofre on 23 September 1964 (A. Fries), one at the entrance to the Oceanside Harbor on 31 December 1977 (D. Povey), and one at San Elijo Lagoon on 3 January 1964 (G. McCaskie).

The time of regular fall arrival is not known exactly but is probably during August; 26 July (1979, one at Point Loma, AB 33:897, 1979) is the earliest reported date for a definite migrant (in breeding plumage). Typical observations for fall and winter are: two at La Jolla on 26 December 1977 (P. Unitt), eight at the entrance to Mission Bay on 5 November 1979 (B. Cord), and seven at the North Island Jetty on 17 December 1979 (D. Povey). Surfbirds become considerably more numerous in spring than at other seasons, with flocks as large as 30 at the entrance to Mission Bay on 25 March 1978 and 35 at Point Loma on 4 April 1979 (C. Edwards). Spring migration may begin as early as mid-February (18 at La Jolla on 13 February 1976, J. Dunn), peaks in late March and early April, and continues through late April (two at La Jolla on 27 April 1976, J. Dunn).

Summering Surfbirds have been reported on three occasions: one collected "near San Diego" on 9 June 1928 (Willett 1933), one on the Silver Strand on 15 June 1962 (AFN 16:508, 1962), and another on the Silver Strand on 14 July 1978 (AB 32:1208, 1978). This last bird could have been an early fall migrant since the observer did not determine if it was in breeding or winter plumage.

RED KNOT

Culidris canutus (Linnaeus) subsp.?

Very common to abundant but localized migrant and winter visitor, common to very common but localized in summer. The range of Red Knot in San Diego County centers on San Diego Bay, and the species shows a strong preference in habitat for tidal mudflats. Large flocks occur also on grass fields immediately adjacent to San Diego Bay. Knots visit lagoons and freshwater ponds along the coast rarely to uncommonly and only during migration. Numbers occurring on San Diego Bay in migration and winter are illustrated by 332 at Coronado on 18 December 1976 (M. Rosenquist), 300 at the Sweetwater River mouth on 17 September 1963, and 500 at the south end of San Diego Bay on 20 March 1964 (G. McCaskie). Red Knots also occur in substantial numbers at Mission Bay, the San Diego River mouth, and the Tijuana River mouth (e.g., 75 at the San Diego River mouth on 11 September 1975, J. Dunn). In the north county, the species is uncommon; five at the Santa Margarita River mouth on 22 May 1972 (A. Fries), eight at Batiquitos

Lagoon on 16 September 1978 (P. Unitt), and nine at San Elijo Lagoon on 4 August 1974 (SEL surv.) are high counts for that area. A single bird at Lake Hodges on 7 September 1979 (AB 34:201, 1980) is the only one reported inland.

Fall migration begins regularly by mid or late July, sometimes as early as early July, with 5 July (1964 on San Diego Bay, G. McCaskie) being the earliest date known for birds in breeding plumage. Knots are migrating south through at least mid-October. In spring, migration extends from late March through late May, with some in breeding plumage at San Diego Bay as late as 31 May 1964 (G. McCaskie).

Red Knots in non-breeding plumage summer regularly at San Diego Bay, in numbers of up to 50 on 4 June 1967 (G. McCaskie) and 125 on 15 June 1978 (P. Unitt).

Subspecies: The race or races of Red Knot occurring in California have never been determined conclusively. Conover (1943), in his revision of the species, identified a small sample of specimens from the Pacific coast of North America as *C. c. canutus* (Linnaeus). Grinnell and Miller (1944) expressed doubt about the subspecific identity of California specimens. The A.O.U. Check-list (1957), while ascribing nominate *canutus* to California, also makes the obscure statement that *C. c. rufa* (Wilson) migrates "rarely on the Pacific coast north to Oregon." Prater et al. (1977) use the name *C. c. rogersi* Mathews for the populations breeding in northeastern Siberia and northern Alaska; birds from that area might be expected to migrate to California. The A.O.U. (1957) and Vaurie (1965) consider *rogersi* a synonym of nominate *canutus*. According to Conover, the races are distinguishable only in breeding and juvenal plumages. Since all the local Red Knot specimens in SD are in winter plumage, I can contribute nothing to the solution of this problem.

SHARP-TAILED SANDPIPER

Calidris acuminata (Horsfield)

Accidental, two records. One was collected at Mission Bay on 16 September 1921 (Anthony 1922b, SD 2255; specimen label says 15 September). Another was photographed at Border Field State Park 27 October - 2 November 1977 (AB 32:258, 1978). One reported at Carlsbad on 7 October 1963 (AFN 18:74, 1964) may have been misidentified.

PECTORAL SANDPIPER

Calidris melanotos (Vieillot)

Uncommon fall migrant, visiting brackish lagoons, agricultural fields, and freshwater ponds and lakeshores, both along the coast and inland. Records indicating the distribution and maximum abundance of the species are: four at the Santa Margarita River mouth on 10 September 1960, 20 at San Elijo Lagoon on 11 October 1963 and 10 October 1965 (G. McCaskie), eight at the San Dieguito River mouth on 21 October 1975 (A. Fries), 20 in the Tijuana

River Valley on 23 September 1967 (G. McCaskie) and on 24 September 1977, and 36 at Lake Henshaw on 17 September 1977 (P. Unitt). Pectoral Sandpipers occur very rarely on tidal mudflats (one on the Silver Strand on 10 October 1976, G. McCaskie; one at the Tijuana River mouth on 3 September 1978, P. Unitt), and also have been reported once from Point Loma (one on 4 October 1969, AFN 24:100, 1970). Four were seen migrating far offshore at the Cortez Banks on 17 September 1978 (D. Povey).

Most Pectoral Sandpipers occur from early September through late October. Extreme dates are 16 August (1970, one in the Tijuana River Valley, G. McCaskie) and 2 November (1977, one in the Tijuana River Valley, D. Povey), except for unusually early individuals at San Elijo Lagoon on 29 June 1977 (AB 31:190, 1977) and at Mission Bay on 30 July 1958 (AFN 12:437, 1958). The report of five at Mission Bay on 25 November 1955 (AFN 10:57, 1956) undoubtedly is a misidentification.

BAIRD'S SANDPIPER

Calidris bairdii (Coues)

Uncommon fall migrant, accidental in spring. Baird's Sandpipers prefer fresh-water ponds, lakeshores, and brackish lagoons, and occasionally visit agricultural fields, but avoid beaches and tidal mudflats. Maximum numbers along the coast are three at the Santa Margarita River mouth on 14 August 1977, five at San Elijo Lagoon on 15 August 1965, six at the San Dieguito River mouth on 22 September 1974 (G. McCaskie), and four in the Tijuana River Valley on 10 September 1978 (M. Evans). Inland, the species occurs regularly at Lake Hodges (up to four on 24 August 1979, G. McCaskie), Lake Henshaw (up to 11 on 17 September 1978, P. Unitt), and presumably other lakes. Baird's Sandpipers occur primarily from mid-August to late September. The earliest recorded date for the species is 16 July (1962, one on the Silver Strand, AFN 16:508, 1962; 1971, one at Oceanside, AB 25:906, 1971). Late dates are 25 October (1973, one at Nestor, AB 28:108, 1974) and 29 October (1964, one in the Tijuana River Valley, AFN 19:79, 1965). Bishop (1905) reported the only county specimen, collected at Pacific Beach on 8 September 1904.

The single spring record is of a bird photographed at the Tijuana River mouth on 5 May 1973 (AB 27:820, 1973). Reports of two wintering near San Diego in 1958-59 (AFN 13:323, 1959), and of four at Buena Vista Lagoon from 30 October to 2 December 1959 (AFN 14:72, 1960) are undoubtedly misidentifications.

SEMPALMATED SANDPIPER

Calidris pusilla (Linnaeus)

Rare fall migrant, visiting fresh-water ponds, streambeds, and brackish lagoons. The Semipalmated Sandpiper was first recorded in San Diego County as recently as 1978, when one was photographed at close range with a Least and a Western Sandpiper in the Tijuana River Valley on

10 September (AB 33:214, 1979). So many were identified in 1980 and 1981 by observers diligently searching for the species that it is apparent Sempalmated Sandpiper is a regular migrant which had previously been overlooked. It was continuously present in the Tijuana River Valley from 9 to 31 August 1980, with a maximum of six on 10 August, and a total of at least 15 individuals (AB 35:226, 1981; G. McCaskie). Single birds were found in the San Luis Rey River bed near Whalen Lake on 27 August 1980 (D. Parker), at Buena Vista Lagoon on 9 August 1981 (B. Schram), at Batiquitos Lagoon on 1 and 14 August 1981 (G. McCaskie), and at the Famosa Blvd. pond near the San Diego River mouth on 2 September 1981 (R. Webster). All were juvenals.

WESTERN SANDPIPER

Calidris mauri (Cabanis)

Abundant migrant and winter visitor, rare during the brief period in summer between spring and fall migration. Western Sandpipers occur in a wide variety of aquatic habitats, but prefer situations with soft mud in which they forage by probing. During fall migration they are abundant on tidal mudflats, very common around brackish lagoons, common at fresh-water ponds both along the coast and inland, fairly common in agricultural fields, and uncommon on sandy ocean beaches. Representative are 750 at the San Diego River mouth on 18 July 1978 (P. Unitt), 200 at the Santa Margarita River mouth on 30 August 1971 (A. Fries), and 40 at Lake Hodges on 17 September 1978 (E. Copper). Fall migration extends from late June through mid-November, with an earliest known arrival date of 23 June (1978, three at Batiquitos Lagoon, P. Unitt). In some years, the species is abundant by early July (1000 at San Diego Bay on 5 July 1964, G. McCaskie), but the peak of fall migration is usually in mid to late August. Adult Western Sandpipers arrive well in advance of juvenals; almost all birds seen in July are adults. Juvenals arrive in large numbers in the first week of August, and greatly outnumber adults during that month.

Western Sandpipers are generally less numerous in winter than in migration, and become uncommon inland, but remain abundant around San Diego Bay and at the San Diego and Tijuana River mouths. Typical winter numbers are: 1100 on the east side of San Diego Bay on 16 December 1978 (B. Cord), 52 at San Elijo Lagoon on 2 February 1975 (SEL surv.), 260 at the Tijuana River mouth on 16 December 1978, and four at Sweetwater Reservoir on 2 December 1978 (P. Unitt).

In spring, numbers increase in March, and peak in April, as indicated by high estimates of 900 at the Santa Margarita River mouth on 10 April 1972 (A. Fries) and 10,000 at the south end of San Diego Bay on 11 April 1970 (AFN 24:644, 1970). Numbers decrease again through May, and a few birds in breeding plumage persist to early June; 5 June (1978, three at the south end of San Diego Bay) is the latest

date for apparently healthy spring migrants.

During mid-June, Western Sandpipers, in non-breeding plumage, are quite rare, and are found only on tidal mudflats (four at the Tijuana River mouth on 14 June 1978, P. Unitt). The birds in breeding plumage reported by van Rossem (1914) as "summering" near San Luis Rey on 12 July 1908 are clearly fall migrants.

RUFIOUS-NECKED SANDPIPER

Calidris ruficollis (Pallas)

Accidental, one record. A juvenal photographed in the Tijuana River Valley on 10 August 1980 was "identified [by Guy McCaskie] primarily by pattern of upper wing coverts and size of bill" (AB 35:226, 1981). Reliability of these characteristics to distinguish juvenal Rufous-necked from the extremely similar juvenal Sempalmated Sandpiper needs further study.

LEAST SANDPIPER

Calidris minutilla (Vieillot)

Very common to abundant migrant and winter visitor, very rare in summer. Least Sandpipers are found in many of the same situations as Westerns, but their habitat preference is guided by their somewhat different feeding habits; Least tend to pick food from the surface, while Westerns probe into soft mud. Thus, even where the two species are together on the same mudflat, the Least concentrate in the higher, dryer areas, the Westerns, along the shoreline or in shallow water. Least Sandpipers are most abundant during fall migration at inland lakes (up to 500 at Lake Henshaw on 5 September 1978), where they usually considerably outnumber Western Sandpipers. At this time Least are also common to very common at brackish lagoons, coastal freshwater ponds, and tidal mudflats (100 at San Elijo Lagoon on 10 August 1977, 50 in the Tijuana River Valley on 4 October 1978, P. Unitt; 150 at San Diego Bay on 11 July 1976, G. McCaskie). While the Western is by far the more abundant species on tidal mudflats, the Least is more numerous in agricultural fields and on sandy ocean shores, and is fairly common on rocky shorelines, where the Western is absent. The earliest known date for a fall migrant is 28 June (1978, one at Agua Hedionda Lagoon), but the main influx occurs in mid or late July. Fall migration continues as late as late November, as indicated by 150 on 26 November 1977 at Lake Henshaw, where 0 and 20 were seen on 18 January and 2 February 1978 respectively (P. Unitt).

Least Sandpipers remain through the winter very commonly along the coast (175 at San Elijo Lagoon on 2 February 1975, SEL surv.; 89 at the south end of San Diego Bay on 18 December 1976, M. Evans) and fairly commonly inland (15 at Santee Lakes on 26 January 1976, J. Dunn). Spring migration starts probably in late February (75 at Lake Henshaw on 25 February 1973, G. McCaskie), certainly by mid-March. The spring peak of the Least Sandpiper is about

the same time as that of the Western (531 at the Santa Margarita River mouth on 10 April 1972, A. Fries; 150 at the San Diego River mouth and Mission Bay on 10 April 1978), but Least depart much earlier. Most have gone by the end of April, and 8 May 1978 (one at the Santa Margarita River mouth, P. Unitt) is the latest recorded date for a migrant.

The exceptional summering birds, such as three at the San Diego River mouth on 4 June 1978 (R. A. Erickson), occur only on tidal mudflats. The "summering" Least Sandpiper collected with Westerns at San Luis Rey on 12 July 1908 (van Rossem 1914) was a fall migrant.

CURLEW SANDPIPER

Calidris ferruginea (Pontoppidan)

Accidental, one record. An adult in breeding plumage was photographed at San Elijo Lagoon on 4 July 1981 (G. McCaskie and many other observers).

DUNLIN

Calidris alpina pacifica (Coues)

Very common to abundant migrant and winter visitor, accidental in summer. By far the greatest numbers of Dunlins occur on tidal mudflats around San Diego Bay. Typical for winter are 800 on the Silver Strand on 17 December 1977 (C. Lyons) and 320 at the south end of the bay on 16 December 1978 (R. Copper). At lagoons and estuaries elsewhere along the coast, Dunlins are generally common (50 at the Santa Margarita River mouth on 11 December 1972, A. Fries; 37 at San Elijo Lagoon on 2 December 1973, SEL surv.; and 20 at the San Diego River mouth on 18 April 1974, J. Dunn). The species is fairly common to common inland on freshwater ponds and lakeshores, at least during fall migration: 25 at Lake Henshaw on 5 November 1978, 10 at Lake Hodges on 15 October 1978, 10 at Lower Otay Lake on 26 November 1978 (P. Unitt).

The first fall migrants usually arrive in late September, much later than the other common shorebirds; 13 September (1970, one at the San Luis Rey River mouth, G. McCaskie) is the earliest date. Also unlike many other shorebirds, Dunlins seem just as numerous in midwinter as during either fall or spring migration. Spring migration extends from March through mid-May, although the species is uncommon after mid-April. The latest recorded spring date is 22 May (1978, two at the Santa Margarita River mouth, P. Unitt).

The single summer record is of an individual in breeding plumage on the Silver Strand on 15 June 1976 (AB 30:1003, 1976).

Subspecies: Geographical variation in Dunlin was studied by Todd (1953b), MacLean and Holmes (1971), and Browning (1977). These authors disagree on certain details, but all agree that the population breeding in western and southern Alaska (*C. a. pacifica*) has a significantly longer bill than the population breeding in northern Alaska (*C.*

a. arctica Todd), and that migrants to California (including eight specimens from San Diego examined by Todd) are of the longer-billed race. My measurements of the bills of the six San Diego County skins in SD support the idea that migrants to this area originate in western and southern Alaska. While three lie in the range of overlap between *pacifica* and *arctica*, they are near the large extreme for the latter, and three are large enough to exclude *arctica*. Browning indicated that the population breeding in arctic Canada (*C. a. hudsonia* Todd) has a bill only slightly shorter than that of *pacifica*, but is distinguishable by having gray streaks on the flanks in winter plumage, and dark shafts to the undertail coverts in breeding plumage. None of the specimens from San Diego has these streaks, so all must be *pacifica*.

SANDERLING

Calidris alba (Pallas)

Common to very common winter visitor, abundant spring and fall migrant, fairly common through summer. The Sanderling is the most characteristic bird of sandy ocean beaches, but it is also fairly common on rocky shorelines and tidal mudflats. During migration, large flocks are found around brackish lagoons also. Sanderlings avoid freshwater ponds even along the coast, and there is only one inland county record, of one at Lake Hodges on 17 August 1979 (AB 34:201, 1980).

Large numbers of fall migrants appear by late July, but more information, distinguishing breeding, winter, and juvenal plumages, is needed to determine when the earliest migrants arrive, probably in late June or early July. Some concentrations in fall are 200 at the Tijuana River mouth on 8 August 1978 and 750 at the Santa Margarita River mouth on 2 August 1978. Typical for winter are 30 at Agua Hedionda Lagoon on 1 January 1978, 15 at La Jolla on 10 February 1978, and 75 at San Diego Bay on 28 January 1978. Large flocks move through again in spring, with a well-marked peak in early May: 150 at San Elijo Lagoon and 100 at the Santa Margarita River mouth on 8 May 1978. The latest spring migrants depart at the end of May, as indicated by ten in breeding plumage at the Tijuana River mouth on 29 May 1978 and eight at the Santa Margarita River mouth on 30 May 1978. Substantial numbers of non-breeding Sanderlings in non-breeding plumage remain through the summer on sandy beaches (15 at the Tijuana River mouth on 14 June 1978; 40 at the Santa Margarita River mouth on 6 June 1978, P. Unitt).

STILT SANDPIPER

Microcalamus himantopus (Bonaparte)

Rare fall migrant. Stilt Sandpipers occur in San Diego County at brackish lagoons, freshwater ponds, and lakeshores; none has been found on salt water. They often associate with flocks of dowitchers. Localities where the species has been recorded are: the Santa Margarita River

mouth (12 August 1969, AFN 23:695, 1969), Buena Vista Lagoon (three times), Batiquitos Lagoon (twice), San Elijo Lagoon (four times), Tijuana River Valley (four times), Lake Hodges (twice), and Lower Otay Lake (22 August 1974, AB 29:121, 1975). Stilt Sandpipers have usually been noted singly; two were found together at Batiquitos Lagoon 1-2 August 1978 (AB 33:214, 1979) and in the Tijuana River Valley on 3 September 1978 (AB 33:214, 1979). Of the seventeen records of Stilt Sandpiper in San Diego County, seven are for August, eight for September, and two for October. Extreme dates are 1 August (1978, cited above) and 21 October (1962, one at San Elijo Lagoon (AFN 17:68, 1963). No Stilt Sandpiper has been collected yet in the county, but M. Evans photographed one in the Tijuana River Valley.

RUFF

Philomachus pugnax (Linnaeus)

Very rare fall migrant, casual in winter and spring. Ruffs have been recorded eight times in fall migration: once at Oceanside (13 September 1970, AB 25:109, 1971), once at Batiquitos Lagoon (from 13 to 21 July 1981), once at San Elijo Lagoon (21 September 1962, McCaskie 1963), and five times in the Tijuana River Valley (2 October 1966, AFN 21:77, 1967; 23 September 1967, AFN 22:90, 1968; from 12 September to 6 October 1968, AFN 23:108, 1969; from 4 to 10 October 1975, AB 30:126, 1976; and on 10 August 1980, AB 35:226, 1981). The birds seen in July and August were adults, those in September and October were immatures. All fall observations are of single birds.

The single winter record is of two in the Tijuana River Valley from 2 November 1968 to 6 April 1969 (AFN 23:108 and 521, 1969). In spring, one was collected at the San Diego River mouth on 30 March 1962 (McCaskie 1963, SD 30290).

BUFF-BREASTED SANDPIPER

Tryngites subruficollis (Vieillot)

Casual fall migrant. Four records: one photographed at Buena Vista Lagoon on 16 September 1967 (AFN 22:90, 1968), two seen at Lake Hodges 2-3 September 1978; one photographed in the Tijuana River Valley 10-18 September 1978 (AB 33:214, 1979), and one seen at the same locality on 9 October 1979, joined by another from 12 through 22 October 1979 (AB 34:201, 1980).

WILSON'S PHALAROPE

Phalaropus tricolor (Vieillot)

Abundant fall migrant, very rare winter visitor, common to very common spring migrant. Wilson's Phalaropes prefer to forage in shallow standing water. By far the greatest numbers congregate during fall migration in the salt evaporation basins at the south end of San Diego Bay, where as many as 3000 were estimated on 10 July 1964 (G. McCaskie). The species is very common in fall migration

at estuaries and lagoons elsewhere along the coast (50 at the Santa Margarita River mouth on 9 August 1971, A. Fries; 200 at San Elijo Lagoon on 23 August 1970, J. Dunn) and fairly common to common on freshwater ponds and lakeshores both along the coast and inland (45 in the Tijuana River Valley on 1 August 1978; 15 at Lake Hodges on 2 September 1978; two at Lake Henshaw on 5 September 1978). Fall migration usually extends from mid-June through early October, with a peak in August. Extreme dates are 15 June (1978, 10 at the south end of San Diego Bay, P. Unitt) and 20 October (1976, one in the Tijuana River Valley, J. Dunn). Migrant Wilson's Phalaropes arrive earlier in fall than any other bird in San Diego County.

In occasional years, a few Wilson's Phalaropes remain through the winter in the south San Diego Bay salt works. The maxima recorded in winter are eight from 19 January to 1 March 1963 (AFN 17:358, 1963) and up to six from 21 December 1976 to 12 March 1977 (AB 31:374, 1977). The species has been noted elsewhere in winter on two occasions: one at San Elijo Lagoon on 5 January 1964 (AFN 18:387, 1964) and one at Oceanside on 3 March 1972 (AB 26:655, 1972).

The numbers of Wilson's Phalaropes passing through San Diego County in spring are not nearly so large as in fall, but substantial flocks are sometimes noted in the salt works, such as 300 on 5 May 1962 (G. McCaskie). Elsewhere along the coast, 42 at the Santa Margarita River mouth on 1 May 1972 (A. Fries) and 25 at San Elijo Lagoon on 5 May 1974 (SEL surv.) are high counts. Wilson's Phalarope has not been noted yet inland in San Diego County in spring, although it should be expected there. Spring migration takes place primarily from mid-April through mid-May; extreme dates are 21 March (1971, 12 at the south end of San Diego Bay, G. McCaskie) and 22 May (1972, one at the Santa Margarita River mouth, A. Fries).

Three observations have been made between 22 May and 15 June: seven in the San Diego Bay salt works on 27 May 1979 (M. Evans), one at San Elijo Lagoon on 2 June 1974 (SEL surv.), and 15 at Batiquitos Lagoon on 9 June 1979 (E. Copper). The birds in the salt works and at Batiquitos Lagoon were in breeding plumage, suggesting they were either very late spring migrants or early fall migrants; the plumage of the bird at San Elijo Lagoon is unknown. Possibly the interval between the departure of the last spring migrant and the arrival of the first fall migrant is only a few days in early June.

NORTHERN PHALAROPE

Phalaropus lobatus (Linnaeus)

Abundant spring and fall migrant, common winter visitor at the south end of San Diego Bay, accidental in summer. The Northern Phalarope is the most abundant and widespread of the three phalaropes, occurring on the open ocean, coastal ponds and lagoons, and inland lakes. For fall migration, 400 between San Diego and San Clemente

Island on 10 September 1977 (G. McCaskie), 471 at the Santa Margarita River mouth on 10 September 1972 (A. Fries), and 2500 in the south San Diego Bay salt works on 14 August 1978 are representative numbers. Inland, the species is fairly common in fall (five at Lake Hodges on 7 September 1978; ten at Lake Henshaw on 17 September 1978). Fall migration extends from late June through early November, with a peak from mid-August through mid-September. The earliest recorded fall date is 27 June (1978, 35 in the salt works, P. Unitt); 8 November (1963, La Jolla, SD 38253) is the latest the species has been recorded away from the salt works.

Each year, Northern Phalaropes remain through the winter in the south San Diego Bay salt works, but none has been found at that season anywhere else in San Diego County. About 50 individuals constitute the usual winter population; there were up to 100 in 1970–1971 (AB 25:628, 1971).

In spring, Northern Phalaropes are usually not as numerous as in fall; 45 at the Santa Margarita River mouth on 10 April 1972 (A. Fries) and 125 between Mission Beach and 10 km (6 miles) off La Jolla on 19 April 1978 (D. Povey) are typical; 1000 between San Diego and San Clemente Island on 8 May 1976 (G. McCaskie) is exceptional. Large flocks have been noted inland in spring (200 at Cuyamaca Lake on 13 April 1978, B. Cord), but more information is needed to determine if this happens regularly. The earliest spring date on which the species has been reported away from the salt works is 10 April (cited above). Migration peaks in late April and early May; 23 May (1926, two off Point Loma, SD 10794–5) is the latest date.

One Northern Phalarope in non-breeding plumage in the salt works on 27 May 1979 (M. Evans) was probably summering.

RED PHALAROPE

Phalaropus fulicarius (Linnaeus)

Irregular migrant and winter visitor, at times abundant. Red Phalaropes prefer to stay on the open ocean. However, bad weather offshore often drives large numbers of them to the coast, and flocks may remain for days after a storm on bays, lagoons, and freshwater ponds within two or three kilometers of the coast. On the ocean, numbers of Red Phalaropes occurring off San Diego County fluctuate greatly from year to year; the species is rare or absent in some winters, abundant in others. Even within a single year, Red Phalaropes may arrive and disperse at times probably governed more by local oceanographic conditions, weather, or food availability than by the species' overall migratory regimen. Numbers such as 500 between San Diego and San Clemente Island on 10 December 1977 (J. Dunn), 600 at La Jolla on 16 April 1976, and 3000 at the south end of San Diego Bay on 3 November 1963 (G. McCaskie) illustrate its maximum abundance. Red Phalaropes are casual inland during migration, with four records: Alpine, 20 August 1928 (SD 12162); Jamacha, 11 May 1930 (SD 12750); Barrett

Reservoir, 26 October 1940 (SD 18240); and Santee Lakes, five on 23 November 1976 (W. T. Everitt).

The times of arrival and departure of Red Phalaropes differ greatly from year to year. The species has rarely been found before late August, but Miller (1936) reported it "abundant offshore" from 23 July to 1 August 1935. In some years the species is not noted until October or November. Spring migrants are seen uncommonly through mid-May in most years, and 29 May (1964, one on San Diego Bay, G. McCaskie) is the latest date.

WILLET

Catoptrophorus semipalmatus inornatus (Brewster)

Very common to abundant migrant and winter visitor, locally common to very common as a non-breeding visitor in summer. Willets are abundant around tidal mudflats, salt marshes, sandy beaches, and flooded agricultural fields, and occur in smaller numbers at brackish lagoons, fresh-water ponds near the coast, and rocky ocean shores. They are most numerous around San Diego Bay (600 along the Silver Strand on 20 December 1980, A. Helbig; 670 on the east side of the bay on the same date, M. Thornburgh). Numbers in the north county are generally much smaller, but large flocks occasionally may be seen there during fall migration, such as 400 at San Elijo Lagoon on 2 September 1969 (A. Fries). Willets occur rarely to uncommonly at inland lakes during fall migration (one at Lake Henshaw on 22 August 1971, G. McCaskie; three at Lake Hodges on 15 October 1978, P. Unitt). The single report from the Anza-Borrego Desert is of a bird along highway S-2 near the Imperial County line on 19 August 1975 (ABDSP file).

The earliest fall migrants arrive very early in the summer (one in breeding plumage on the Silver Strand on 19 June 1978), and large numbers of birds in breeding plumage are present by the first week of July. Migration peaks from late July to early September, and probably continues through mid or late October. Willets remain abundant through winter on tidal mudflats, but in other habitats they become less common from November to March. Migration of Willets in spring is not nearly so conspicuous as in fall, but extends at least from early April through mid-May. A few stragglers in breeding plumage may linger to late May (three at the Tijuana River mouth on 29 May 1978, P. Unitt).

Substantial numbers of birds in non-breeding plumage remain through June around San Diego Bay (100 on 4 June 1967, G. McCaskie) and at the San Diego and Tijuana (30 on 14 June 1978, P. Unitt) river mouths. In the north county, summering Willets are generally rare, though numbers as high as 32 at the Santa Margarita River mouth on 12 June 1972 (A. Fries) and 29 at San Elijo Lagoon on 1 June 1980 (SEL surv.) have been reported.

LESSER YELLOWLEGS

Tringa flavipes (Gmelin)

Fairly common fall migrant, rare winter visitor and spring migrant. Lesser Yellowlegs occur in greatest numbers

around brackish lagoons and freshwater ponds, less numerous in salt marshes, and rarely on tidal mudflats. The species is most numerous during fall migration around the lagoons and estuaries of northern San Diego County, with maximum estimates of 30 at the Santa Margarita River mouth on 29 August 1961 (AFN 15:492, 1961), 15 at Buena Vista Lagoon on 1 September 1976 (J. Dunn), and 30 at San Elijo Lagoon on 8 September 1966 (G. McCaskie). High numbers for the San Diego area are seven at the Sweetwater River mouth on 4 November 1978 (P. Unitt) and 15 in the Tijuana River Valley on 13 September 1976 (J. Dunn). Lesser Yellowlegs occur uncommonly also at inland lakes in the coastal lowland, with up to four at Lake Hodges on 2 and 4 September 1978 (P. Unitt). One was noted at Lake Henshaw on 22 August 1971 (G. McCaskie). The earliest known fall date for the species is 29 June (1977, one at the San Dieguito River mouth, P. Unitt), but it is rare before late July. Mid-August to mid-September represents the peak of fall migration, and most migrants continue south by mid-November.

During the winter, in contrast to fall, Lesser Yellowlegs are seen most frequently in the San Diego area, and are very rare in the north county. Seldom is more than a single individual seen at once during the winter; three in the Tijuana River Valley on 26 January 1969 (G. McCaskie) and three at the Sweetwater River mouth on 17 December 1977 (B. Cord) are high numbers. I suspect the report of nine at Mission Bay on 10 January 1934 (Michael 1935b) is in error, since the active feeding habits described are characteristic of the Greater rather than Lesser Yellowlegs. One at the Santa Margarita River mouth on 31 December 1977 (A. Fries) and one in the San Luis Rey River Valley in Oceanside on 20 January 1976 (J. Dunn) are the only winter reports from the north county. Spring migration may begin as early as early March (two at San Elijo Lagoon on 9 March 1968, G. McCaskie), and is certainly underway by late March. In spring, as in winter, only scattered single individuals usually are encountered, but an exceptional concentration of seven was noted at Bonita on 30 March 1962 (G. McCaskie). The latest spring dates for Lesser Yellowlegs are 25 April (1978, one on the Silver Strand, E. Copper) and 27 April (1962, one at the San Diego River mouth, G. McCaskie).

GREATER YELLOWLEGS

Tringa melanoleuca (Gmelin)

Fairly common to common fall migrant, fairly common winter visitor and spring migrant, casual in summer. Greater Yellowlegs visit a wide variety of aquatic habitats: lakes, ponds, lagoons, tidal mudflats, and salt marshes. They occur throughout the coastal slope of San Diego, with the largest numbers along the coast and in the lowland. In the foothill and mountain regions the species has been found during both spring and fall migration (eight at Lake Henshaw on 17 September 1978, P. Unitt; one at Lake Cuyamaca on

14 April 1979, G. McCaskie), but is evidently absent in winter.

Greater Yellowlegs are most abundant during fall migration, with numbers up to 23 at the Santa Margarita River mouth on 16 August 1971 (A. Fries), 30 at San Elijo Lagoon on 5 September 1977, and 15 at Lake Hodges from 30 August to 7 September 1978. Fall migrants regularly arrive in late June (one at San Elijo Lagoon on 27 June 1976, one on 28 June 1977 and another on 28 June 1978 at the Santa Margarita River mouth), and increase during July, to reach a peak from mid-August to mid-September. Numbers decline during October, but a few birds are still migrating as late as mid-November (one at Lake Henshaw on 18 November 1978, P. Unitt). Typical counts in winter are: six at San Elijo Lagoon on 2 February 1975 (SEL surv.), ten at Santee Lakes on 26 January 1977 (J. Dunn), and five in the Tijuana River Valley on 24 December 1977 (P. Unitt). There is little evidence for a spring migration peak of Greater Yellowlegs. Most have departed by the end of April: 16 May (1978, two at the Sweetwater River mouth) and 19 May (1974, one at the Tijuana River mouth, P. Unitt) are late dates for spring migrants. Only three instances are known of Greater Yellowlegs remaining later into the summer: two at San Elijo Lagoon on 1 June 1975 (SEL surv.), one on San Diego Bay on 4 June 1967, and one on the Silver Strand on 15 June 1976 (G. McCaskie).

SOLITARY SANDPIPER

Tringa solitaria cinnamomea (Brewster)

Uncommon fall migrant, casual spring migrant. Fresh-water ponds, and to a lesser extent brackish lagoons, are the habitats Solitary Sandpipers visit in San Diego County. The species occurs primarily along and near the coast, and has been reported most often and in the greatest numbers from the Tijuana River Valley, with a maximum of nine on 30 August 1979 (E. Copper). Some other localities where it has been noted are the Santa Margarita River mouth (two on 17 August 1973, A. Fries), San Elijo Lagoon (one on 20 September 1964, AFN 19:79, 1965), Bonita (one on 17 August 1977, J. Dunn), and Otay Mesa (many occasions). The only county specimen in SD (15606) was collected at a pond at 45th and Market streets in San Diego on 1 September 1931. Farther inland, single individuals have been reported in fall from Lower Otay Lake (14 September 1975, R. L. Pitman), Lake Hodges (17 August 1979, G. McCaskie), and Lake Henshaw (22 August 1971, AB 26:121, 1972). Solitary Sandpipers occur mainly from mid-August through mid-September; extreme dates are 25 July (1976, one in the Tijuana River Valley, AB 30:1003, 1976) and 18 October (1975, one at Otay Mesa, AB 30:126, 1976).

Spring migrants have been recorded three times: one at Rancho Bernardo on 5 April 1973 (AB 27:820, 1973), one at San Elijo Lagoon on 12 April 1975 (AB 29:908, 1975), and one in the Tijuana River Valley on 16 April 1979 (AB 33:805, 1979). Cooper's (1874) statement that the species "occurred rarely along wooded streams high in the

[Cuyamaca] mountains" is obviously a misidentification of the Spotted Sandpiper.

WANDERING TATTLER

Tringa incana (Gmelin)

Uncommon migrant and winter visitor, casual in summer. Wandering Tattlers are restricted to rocky ocean shorelines and artificial rock breakwaters. Some records illustrating the range and abundance of the species are: two at the entrance to the Oceanside Harbor on 1 January 1977 (D. Povey), five at La Jolla on 8 May 1977, two at the entrance to Mission Bay on 21 February 1978 (P. Unitt), eight at Point Loma on 18 December 1976 (C. Edwards), and seven on the North Island jetty at the entrance to San Diego Bay on 18 December 1976 (D. Povey). Spring migrants have been found inside San Diego Bay at the Sweetwater River mouth on 3 May 1927 (SD 2333), at Shelter Island on 22 May 1971 (A. Fries), and at the Fifth Avenue Basin on 16 April 1978 (P. Unitt).

The extreme dates of normal of Wandering Tattler occurrence are 22 July (1977, two at the Oceanside harbor, A. Fries) and 22 May (cited above). Summering birds have been noted three times: one at La Jolla on 22 June 1965 (A. Fries), another there on 2 June 1976 (AB 30:1003, 1976), and one at Pacific Beach on 15 June 1975 (SD 39529, preserved as skeleton).

SPOTTED SANDPIPER

Tringa macularia Linnaeus

Uncommon to fairly common migrant and winter visitor, one record of breeding. Rocky ocean shorelines, fresh-water ponds, lakeshores, and streambeds are the most characteristic Spotted Sandpiper habitats; brackish lagoons and salt marshes are visited uncommonly, and tidal mudflats, rarely. Although the species is never seen in large flocks as are many other shorebirds, it has the widest distribution in San Diego County of any bird of its family. It occurs during winter as well as in migration throughout the coastal lowland, and as high as Lake Henshaw (10 on 25 February 1973, G. McCaskie). During migration, the Spotted Sandpiper has also been recorded at Lake Morena (25 August 1933, SD 16528), and undoubtedly it visits lakes and streams elsewhere in the foothill and mountain zones. It has been seen even in the Anza-Borrego Desert (one each at Carrizo Marsh and Vallecito Canyon on 6 May 1978, P. Unitt). Some examples of Spotted Sandpiper abundance are: eight at San Elijo Lagoon on 1 September 1974 (SEL surv.), 21 at Point Loma on 18 December 1976 (C. Edwards), and five at Sweetwater Reservoir on 28 October 1978 (P. Unitt).

Fall arrival is usually in mid or late July, although the species has been reported as early as 30 June (1978, one at the San Diego River mouth, C. Edwards). No migration peaks have yet been demonstrated for Spotted Sandpipers. Spring migration continues well into May, with latest dates of 22 May (1978, two at the Santa Margarita River mouth,

P. Unitt) and 1 June (1975, one at San Elijo Lagoon, SEL surv.).

A flightless young Spotted Sandpiper was seen with its parents at the east end of Lake Hodges 26-30 July 1981 (G. McCaskie). This is the first record of the species breeding south of Ventura County and the San Bernardino Mountains.

WHIMBREL

Numenius phaeopus hudsonicus Latham

Common to very common fall migrant, uncommon to fairly common winter visitor, fairly common spring migrant, rare to uncommon in summer. Whimbrels are found on rocky ocean shores, mudflats, and at lagoons; during migration they also visit agricultural fields and fresh-water ponds. They are basically coastal in distribution, but occur regularly a few miles inland in the Tijuana River Valley and probably wherever there are agricultural fields near the coast. Farther inland, the species has been noted once at Otay Mesa (four on 11 September 1973, J. Dunn) and once at Lake Hodges (three on 7 September 1978).

Whimbrels are much more abundant during fall migration than at other seasons, with estimates of up to 40 in the Tijuana River Valley on 17 August 1978, 100 at Agua Hedionda Lagoon on 9 August 1978 (P. Unitt), and 225 at San Elijo Lagoon on 6 August 1978 (SEL surv.). The first fall migrants usually arrive in mid-July, and 2 July (1978, 12 at San Elijo Lagoon, SEL surv.) is the earliest date for individuals that probably did not summer locally. Whimbrel migration peaks from late July through early August, and continues at least into early October. Much smaller numbers remain through the winter, such as four at Agua Hedionda Lagoon on 3 January 1976 (V. Shaw), six on the Silver Strand on 17 December 1977 (C. Lyons), and nine at Point Loma on 16 December 1978 (C. Edwards). The species is not found in nearly the abundance in spring migration as in fall, but flocks are encountered occasionally: 19 at the Santa Margarita River mouth on 10 April (A. Fries), 35 at the Tijuana River mouth on 11 April 1978, and 20 at Mission Bay on 5 May 1978. Spring migration extends at least from early April to mid-May, with a few stragglers occurring as late as 24 May (1978, two at Mission Bay, P. Unitt).

A few persist regularly through midsummer, such as two on San Diego Bay on 20 June and 5 July 1964 (G. McCaskie), three at Los Peñasquitos Lagoon on 29 June 1977, and four at San Elijo Lagoon on 23 June 1978 (P. Unitt). Unlike many other species of shorebirds, summering Whimbrels seem just as likely to occur along the coast of northern San Diego County as around San Diego Bay.

LONG-BILLED CURLEW

Numenius americanus Bechstein subsp.

Fairly common to common fall migrant, uncommon to fairly common winter visitor and spring migrant, uncommon and

local in summer. Tidal mudflats and salt marshes are this species' preferred habitats, and San Diego Bay, Mission Bay, the San Diego River mouth, and the Tijuana River mouth are the localities where it can be found consistently. Usually only a few scattered birds are seen; counts as high as 100 along the Silver Strand on 17 December 1977 (C. Lyons) and 46 at the Tijuana River mouth on 17 February 1974 (P. Unitt) are exceptional. Also, Long-billed Curlews are common at times in fall in agricultural fields in the Tijuana River Valley, with a maximum of 150 on 20 September 1977 (J. Dunn). Along the coast of northern San Diego County, they are rare in winter and spring, and uncommon in fall, with occasional flocks (31 and 21 at the Santa Margarita River mouth on 9 August and 6 September 1971 respectively, A. Fries). Far from the coast, the only observation is of seven at Lake Henshaw on 5 September 1978 (B. Cord).

The timing of Long-billed Curlew migrations is poorly known. Fall migrants probably begin arriving in July, and are most numerous and widespread in August and September. Small numbers of curlews remain through summer at their favorite wintering localities; examples are ten at San Diego Bay on 20 June 1964 (G. McCaskie) and three at the Tijuana River mouth on 30 June 1974. Also, they occur very rarely in summer in the north county (one at the Santa Margarita River mouth on 16 June 1978, P. Unitt; one at San Elijo Lagoon on 7 July 1974, SEL surv.).

Subspecies: Two races of Long-billed Curlew are generally recognized, but many authors express doubts about their validity. Willett (1933) reported that of the eight specimens taken in SD, the seven taken in fall (22 September – 12 October) were nominate *americanus*, while the single winter bird (23 January 1919) was *N. a. parvus* Bishop. Re-examining these specimens, along with two taken in August since added to the collection, I judge using Ridgway's (1919) measurements that three are unidentifiable, four are *americanus*, and at least two are *parvus* (the one cited by Willett and another female taken in September 1921; culmen 157 mm). A male collected on 11 August 1919, culmen 126 mm, may be *parvus* as well, but as it is immature, possibly its bill is not fully grown.

BAR-TAILED GODWIT

Limosa lapponica baueri Naumann

Accidental, one record. One foraged in kelp washed up on the beach adjacent to the Hotel del Coronado at Coronado from 4 to 27 November 1981 (B. Shear and many other observers; photographed). The bird was identifiable in the field as the east Siberian and Alaskan race *L. l. baueri* by its mostly brown axillars and barred lower back.

MARBLED GODWIT

Limosa fedoa (Linnaeus)

Very common to abundant migrant and winter visitor, locally common to very common in summer. Marbled Godwits are

most abundant on tidal mudflats, and are common also in salt marshes and in agricultural fields; smaller numbers visit brackish lagoons, fresh-water lakes, and rocky ocean shores. The species is largely coastal in distribution, extending commonly a few miles inland in the San Luis Rey and Tijuana River valleys. It may be seen uncommonly around lakes farther inland as well, with up to 20 at Lake Hodges on 15 October 1978, and one at Lake Henshaw on 17 September 1978. Some typical numbers of migrants and winter visitors are: 40 at Whalen Lake on 22 January 1978, 15 at Agua Hedionda Lagoon on 6 October 1978, 600 on the Silver Strand on 11 March 1978, and 60 in the Tijuana River Valley on 29 September 1978 (P. Unitt). Because substantial numbers of Marbled Godwits remain in San Diego County through the summer, the schedule of migration is difficult to determine with much precision. The earliest fall migrants probably arrive in mid-July; most spring migrants depart by early May. Fall migrants are most numerous at the lagoons of northern San Diego County in mid and late August.

Large numbers of Marbled Godwits stay through summer around San Diego Bay (96 at Chula Vista on 14 June 1976; 125 on the Silver Strand on 15 June 1976, G. McCaskie) and at the Tijuana River mouth (40 on 19 June 1978, P. Unitt). They are generally rare to uncommon in summer at other lagoons and estuaries along the coast of San Diego County, with maxima of 39 at San Elijo Lagoon on 4 June 1978 (SEL surv.) and 30 at the Santa Margarita River mouth on 1 July 1971 (A. Fries).

LONG-BILLED DOWITCHER

Limnodromus scolopaceus (Say)

Very common migrant and winter visitor to brackish lagoons, fresh water ponds and lake shores, and flooded agricultural fields. In contrast to the Short-billed Dowitcher, the Long-billed is uncommon on tidal mudflats.

Long-billed Dowitchers are most numerous and widespread during fall migration, when they are very common both along the coast (75 at Batiquitos Lagoon on 16 September 1978, 75 in the Tijuana River Valley on 22 September 1978) and at inland lakes (100 at Lake Hodges on 15 October 1978, 50 at Lake Henshaw on 18 November 1978). Fall migration of adults begins generally in mid or late July, with 29 June (1977, four at San Elijo Lagoon and 16 July (1976, 16 at Nestor) being the earliest recorded dates. More information is needed on the difference in the migration schedule between adult and juvenal dowitchers but apparently juvenal Long-billeds arrive in September, much later than the adults. The migration of both adult and juvenal Long-billed Dowitchers averages about a month later than that of the respective age classes of Short-billed Dowitcher, and may extend as late as mid-November.

Wintering birds remain on ponds and lakes in the lowland as well as along the coastline. A sample of winter estimates is: 15 at Whalen Lake on 3 January 1978 (P. Unitt), 150

at San Elijo Lagoon on 31 December 1977 (SEL surv.), 30 at Santee Lakes on 14 February 1975 (J. Dunn), and 25 in the Tijuana River Valley on 16 December 1978 (E. Copper). Again during spring migration Long-billed Dowitchers occur far inland, as indicated by six and 10 at Lake Cuyamaca on 21 March and 29 March 1976 respectively (G. McCaskie). Spring migration extends from at least late March through early May, with a latest date of 20 May (1979, one at the south end of San Diego Bay, P. Unitt). In contrast to the Short-billed Dowitcher, the Long-billed has never been identified in San Diego County in midsummer.

As a general guide, a flock of dowitchers on a tidal mudflat is likely to be mostly Short-billed, while a flock on an inland lake is likely to be mostly Long-billed. From November through February a flock of dowitchers at a coastal lagoon or pond is likely to be mostly Long-billed, while during migration either species or some mix of both could occur in those habitats.

SHORT-BILLED DOWITCHER

Limnodromus griseus (Gmelin) subsp.

Locally abundant migrant and winter visitor, fairly common locally as a non-breeder in summer. Tidal mudflats are Short-billed Dowitcher's preferred habitat, and the species is virtually restricted to this habitat in winter and summer. Migrating birds may be found in more varied conditions: brackish lagoons, flooded agricultural fields, and the shores of fresh water ponds and lakes.

The species occurs commonly to very commonly in fall at many places along the coast (50 at Batiquitos Lagoon on 20 August 1978, 100 at San Elijo Lagoon on 3 July 1977, and 75 in the Tijuana River Valley on 12 September 1977). The Short-billed Dowitcher has been found inland only during the fall, when it is regular though uncommon at Lake Hodges (10 on 4 and 7 September 1978) and Lake Henshaw (five on 5 September 1978). Fall migration extends from late June (earliest record, two at Batiquitos Lagoon on 23 June 1978, P. Unitt) through at least mid-October. The first juvenal birds arrive in late July, about a month later than the first adults.

Short-billed Dowitchers remain abundantly through the winter around San Diego Bay (700 on the east side of the bay on 17 December 1977, B. Cord), and in smaller numbers at the San Diego and Tijuana River mouths, but are very rare at this season in the north county (one at the San Luis Rey River mouth on 31 December 1977, A. Fries). Spring migrants are most conspicuous in late April and early May, with a flock of 60 including many birds in breeding plumage present at the south end of San Diego Bay as late as 20 May 1979. I suspected that a few dowitchers in breeding plumage at the south end of San Diego Bay on 29 May 1978, and two at Batiquitos Lagoon on 6 June 1978 were Short-billed.

Summertime Short-billed Dowitchers, in non-breeding plumage, occur regularly at the San Diego River mouth (three on 2 June 1976, J. Dunn), San Diego Bay (33 at Chula

Vista on 14 June 1976, G. McCaskie), and the Tijuana River mouth (10 on 14 June 1978, P. Unitt). A flock apparently remained through June 1979 at Batiquitos Lagoon, with up to 45 birds on 9 June (E. Copper).

Subspecies: Pitelka (1950) studied variation in the dowitchers, and identified the migrant Short-billed Dowitchers of California with the breeding population of southern Alaska (*L. g. caurinus* Pitelka). Considerable overlap in both size and color makes it difficult to identify individual specimens, so small numbers of the other two races, *L. g. hendersoni* Rowan and *L. g. griseus* (Gmelin), could easily reach San Diego County without being noticed. A. R. Phillips identified a female collected at Whalen Lake on 24 September 1961 (AMR 36) as probably *hendersoni*, the race breeding in central northern Canada. He measured its wing as 144 mm, just outside the range (145–155 mm) Pitelka gives for *caurinus*, but about average for *hendersoni* (137–152 mm).

COMMON SNIBE

Gallinago gallinago delicata (Ord)

Fairly common to common migrant and winter visitor in damp grassy fields and in the low vegetation bordering lakes, ponds, and lagoons. Some records which illustrate the species' abundance are: nine at the Santa Margarita River mouth on 31 December 1977 (A. Fries), 23 at San Marcos on 3 January 1976 (W. Lenarz), four at San Elijo Lagoon on 3 February 1974 (SEL surv.), and 25 in the Tijuana River Valley on 16 December 1978 (P. Unitt).

Common Snipe is widespread in the coastal lowland, and has been found in winter as well as in migration at Lake Henshaw (one on 21 January 1978, P. Unitt). Snipes also occur rarely on the east side of the mountains: one at Borrego Springs on 2 April 1977 (G. McCaskie), one at Vallecito on 27 October 1969 (A. Fries), and two at Jacumba on 10 April 1976 (G. McCaskie).

Seasonally, the Common Snipe occurs primarily from early September to early April. Early extreme dates are 16 August (1964, one in San Diego, G. McCaskie) and 21 August (1977, one in the Tijuana River Valley, P. Unitt); late dates are 1 May (1921, 5 km [3 miles] west of Santee, SD 31268) and 4 May (1975, one at San Elijo Lagoon, SEL surv.).

Jaegers and Skuas

Family *Laridae*

SUB-FAMILY STERCORARIINAE

SOUTH POLAR SKUA

Catharacta macormicki (Saunders)

Very rare spring migrant, casual in fall. This highly pelagic migrant from the southern hemisphere is probably fairly regular off San Diego County from mid-May to early June, with seven records during this period: one or two near San Clemente Island on 31 May and 1 June 1971 (AB 25:801, 1971), one 56 km (35 miles) off San Diego on 19 May 1973

(AB 27:820, 1973), one near San Clemente Island on 21 May 1975 (AB 29:909, 1975), one off San Diego on 14 May 1977 (AB 31:1047, 1977), four off San Diego on 20 May 1978 (AB 32:1055, 1978), and one off San Diego on 19 May and 3 June 1979 (AB 33:805, 1979). Three South Polar Skuas have been reliably reported in fall: one 32 km (20 miles) east of the Cortez Banks on 13 October 1971, one at the Cortez Banks on 14 October 1971 (Jehl 1973), and one collected at Silver Strand State Beach on 23 November 1975 (CSULB 4785: AB 31:376, 1977). The birds reported near San Clemente Island on 13 August 1957, 28–30 August 1957 (AFN 11:428, 1957), 12 August 1961 (AFN 15:493, 1961), and 3 September 1965 (AFN 20:91, 1966) may have been misidentified Pomarine Jaegers.

POMARINE JAEGER

Stercorarius pomarinus (Temminck)

Common spring and fall migrant, uncommon to fairly common winter visitor. The Pomarine Jaeger is a pelagic species, usually keeping at least 3–5 km (2–3 miles) out to sea. It is rarely seen from shore (most often at La Jolla) and is very rare on San Diego Bay (e.g., one on 15 September 1962, G. McCaskie; one on 23 February to 2 March 1974, AB 28:692, 1974). The species is most numerous in fall, when high estimates for trips between San Diego and San Clemente Island are 140 on 11 September 1971, and 85 on 14 September 1974. From December through March the Pomarine Jaeger is less numerous than during migration, but substantial numbers are still sometimes seen, such as 25 between San Diego and San Clemente Island on 27 February 1971 (G. McCaskie) and 25 off La Jolla on 10 December 1977 (AB 32:399, 1978). In spring, it is again common, though not quite so abundant as in fall; maxima are 50 between San Diego and the Cortez Banks on 27 April 1968 (AFN 22:576, 1968), and 60 between San Diego and San Clemente Island on 14 May 1977. Extreme dates for Pomarine Jaeger are 16 August (1969, 12 between San Diego and San Clemente Island) and 3 June (1972, two in the same area). An unidentified jaeger was seen between San Diego and the Cortez Banks on 27 July 1968 (G. McCaskie).

PARASITIC JAEGER

Stercorarius parasiticus (Linnaeus)

Fairly common migrant and winter visitor, casual in summer. The Parasitic Jaeger, while still oceanic in habits, is seen along the coast far more often than Pomarine Jaeger. Parasitics occur well out to sea, at least during fall migration, but are considerably outnumbered there by Pominarines. The pelagic maximum recorded is 25 between San Diego and San Clemente Island on 11 September 1971 (G. McCaskie). From shore, the Parasitic Jaeger is most frequently seen at La Jolla, but has been noted at many other coastal points as well. The highest number observed from shore is 16 at La Jolla on 1 March 1976 (AB 30:766, 1976), when gale force winds were driving the birds toward shore.

More usual are five at La Jolla on 27 April 1976 and three at Point Loma on 25 September 1976 (J. Dunn). Rarely do the birds enter San Diego or Mission bays (three in Mission Bay on 24 February 1977, AB 31:374, 1977).

Changes in abundance from fall to winter to spring are not very well marked in Parasitic Jaeger, though it is most common in fall. Extreme dates are 27 August (1977, one at Border Field State Park) and 23 May (1965, one at Imperial Beach, G. McCaskie). More study offshore during August would probably reveal an earlier normal fall arrival. Summer records are of an individual seen at the Santa Margarita River mouth from 12 June to 10 July 1971 (AB 25:906, 1971), and two observed 1.6 km (1 mile) off La Jolla on 14 June 1978 (AB 32:1208, 1978; D. Povey).

LONG-TAILED JAEGER

Stercorarius longicaudus Vieillot

Rare fall migrant, accidental in spring. The Long-tailed Jaeger has highly pelagic habits, and is not normally seen within sight of land. There are only two reports from shore: an immature collected at Pacific Beach on 19 September 1904 (Bishop 1905), and the single spring record cited below. However, the species' high altitude, non-stop, inland migration evidently covers San Diego County, as indicated by an adult found exhausted at Pala after Tropical Storm Doreen on 18 August 1977 (SD 40390, AB 32:258, 1978). This is the only inland record of a jaeger in San Diego County.

The largest concentrations of Long-tailed Jaegers noted are a flock of nine 32 km (20 miles) east of the Cortez banks on 13 October 1971 (Jehl 1973) and five 96 km (60 miles) off San Diego on 3 September 1967 (SD 36124–5, AFN 22:90, 1968). Seldom is more than a single individual noted during a day pelagic trip however, and occasional years pass with no record of the species.

Because of the scheduling of Western Field Ornithologists pelagic birdwatching trips during early and mid-September, most records of Long-tailed Jaegers are for that period. Extreme dates are 18 August (the specimen from Pala cited above) and 18 October (1977, one 14 km [9 miles] off San Diego, D. Povey). Pelagic investigations in July and August would undoubtedly indicate that the species arrived earlier in the fall than present information suggests. The one spring record is of an adult seen at the south end of San Diego Bay on 11 May 1962 (AFN 16:447, 1962; G. McCaskie).

Gulls

Family *Laridae*

SUB-FAMILY LARINAE

LAUGHING GULL

Larus atricilla Linnaeus

Very rare vagrant in fall, winter, and spring, with 13 records between 9 September (1972, one at sea between San Diego and San Clemente Island, AB 27:121, 1973) and 30 May (1965, one at the San Diego River mouth, AFN 19:511,

1965). Eight of the 13 are for the months December through March. All records involve single individuals except one of two seen at the San Diego River mouth on 1 February 1980 (AB 34:306, 1980). Most Laughing Gulls have been found along the coast in the San Diego area, with one in the north county (photographed at Buena Vista Lagoon, 23 January - 4 February 1980, AB 34:306, 1980) and one a short distance inland at the former Balboa Park dump (23 March 1964, AFN 18:387, 1964). The report of six at Lake Cuyamaca in the spring of 1953 (AFN 7:291, 1953) is undoubtedly a misidentification of Bonaparte's Gull.

FRANKLIN'S GULL

Larus pipixcan Wagler

Rare fall migrant; casual winter visitor and spring migrant. Franklin's Gulls have been found in a variety of situations on the coast of San Diego County: on the open water of San Diego Bay, at lagoons and estuaries (recorded at Buena Vista and San Elijo Lagoons, and at the Santa Margarita, San Dieguito, San Diego, and Tijuana River mouths), agricultural fields (Tijuana River Valley), fresh water ponds (Otay River Valley, Otay Mesa), and on the ocean near the coast (off Point Loma and Imperial Beach). The species has also been noted three times on inland lakes: two at Lake Henshaw on 31 October 1978 (AB 33:214, 1979), one adult at Lake Hodges 3-7 November 1979 (G. McCaskie), and one immature at Lake Hodges 10 November 1979 - 5 January 1980 (AB 34:306, 1980). Usually only a single Franklin's Gull is seen at any one time, but two have been found together on a few occasions, and exceptionally five were at San Elijo Lagoon on 18 October 1964 (G. McCaskie). Two or three Franklin's Gulls is the average number for a year in San Diego County, but a maximum of eight was recorded in 1964 (including the five just mentioned) and a few years, such as 1975-1977, have passed without a single report.

Of the approximately 40 Franklin's Gulls noted in San Diego County, a large majority has been found from late September through mid-November with a peak in late October. Extreme dates for fall migrants are 6 September (1963, one at the Santa Margarita River mouth, McCaskie and Cardiff 1965) and 20 November (1974, one on San Diego Bay at Shelter Island, AB 29:122, 1975), with an exceptionally early individual reported at the Santa Margarita River mouth on 29 July 1951 (AFN 5:308, 1951).

There have been four winter observations: one on the lower Otay River on 17 December 1977 (G. McCaskie), one at the Imperial Beach pier on 21 January 1978 (AB 32:400, 1978), one at Buena Vista Lagoon 1-23 January 1980 (AB 34:306, 1980), and the bird at Lake Hodges mentioned above. Spring migrants have been recorded five times from mid-April to late May: off Imperial Beach, 21 May 1967 (AFN 21:541, 1967); off Point Loma, 26 April 1970; San Diego, 16 May 1970 (AFN 24:644, 1970); Oceanside, 11 April 1971 (AB 25: 801, 1971); and Buena Vista Lagoon, 26-27 April 1980 (AB 34:816, 1980).

LITTLE GULL

Larus minutus Pallas

Accidental, one record. One was photographed at the Oceanside Harbor on 27 December 1981 (R. Webster). The bird became entangled in fishing line and was injured later that day. It was then taken to Sea World marine park in San Diego, where it was maintained in captivity. It died on 27 March 1982 and is preserved as SD 41883.

Little Gulls have been seen in California with increasing frequency since the first was photographed near Mecca, Riverside County, 16-21 November 1968 (AFN 23: 108, 1969). At least a dozen individuals had been reported by 1982, reflecting the species' colonization and expansion in the northeastern United States and Great Lakes region. The specimen from Oceanside is the first for California; a second (SD 41796) was picked up at the Whitewater River mouth on the Salton Sea, Riverside County, on 12 June 1982, after first having been seen alive on 6 June.

SABINE'S GULL

Larus sabini Sabine

Uncommon to fairly common migrant on the open ocean. Five to fifteen Sabine's Gulls are average numbers for a day pelagic trip out of San Diego in May or September. Counts of over 25 in a day are exceptional. The spring maximum is 35 between San Diego and San Clemente Island on 8 May 1976 (AB 30:891, 1976); the fall maximum, 100 in the same area on 4 September 1965 (G. McCaskie) and on 3 September 1967 (AFN 22:90, 1968). Sabine's Gulls are seen rarely within 8 km (5 miles) of the coast, and there are only four reports of birds seen from shore: one collected on San Diego Bay on 23 April 1908 (CAS 11542), one at Silver Strand State Beach on 29 May 1962 (AFN 16:447, 1962), nine following a fishing boat just off Border Field State Park on 27 August 1978 (G. McCaskie), and one at the south end of San Diego Bay on 26 September 1981 (D. Parker). There is one bizarre inland report, of a bird in "juvenile plumage" seen "about 32 miles [51 km] east of the Pacific" on 10 October 1920 (Lee 1921); Grinnell and Miller (1944) cite this locality as "near El Cajon." The timing of Sabine's Gull migration is not well known because pelagic observations have not been made uniformly throughout the year. Extreme dates in spring are 23 April (cited above) and 3 June (1972, 15 off San Diego, J. Dunn). In fall, the species has been reported from 11 July (1972, two off San Diego, AB 26:906, 1972) to 22 October (one between San Clemente Island and San Diego, Jehl 1973), with an exceptionally late individual off San Diego on 22 November 1969 (J. Dunn).

Subspecies: The birds breeding in western Alaska (*L. s. "woznescikii"* Portenko) average slightly darker than those breeding in northern Alaska, Canada, or Siberia, but Vaurie (1965) considered the difference to be inadequate for subspecific separation.

BONAPARTE'S GULL*Larus philadelphia* (Ord)

Abundant migrant and winter visitor; irregularly uncommon as a non-breeding summer visitor. Bonaparte's Gulls are very widespread in San Diego County. Large numbers are seen at times on the open ocean near shore, such as 10,000 off La Jolla on 9 December 1967 (G. McCaskie) and 1750 at Point Loma on 20 December 1975 (C. Edwards). Along the coast, the species forages in estuaries, lagoons, bays, and freshwater ponds. Representative for these areas are 134 at the Santa Margarita River mouth on 24 April 1972 (A. Fries), 335 at San Elijo Lagoon on 1 December 1974 (SEL surv.), and 184 on San Diego Bay on 20 December 1975 (R. Copper). Bonaparte's Gulls are also very common through the winter on large lakes in the coastal lowland (125 at Lake Hodges on 30 November 1979, P. Unitt; 125 at Sweetwater Reservoir on 18 December 1976, W. T. Everett). Farther inland, the species is uncommon to fairly common in fall and winter (10 at Lake Henshaw on 21 January 1978, P. Unitt), but becomes abundant during spring migration: 490 at Lake Henshaw on 31 March 1979; 300 there on 2 May 1979 (AB 33:806, 1979) and 1 April 1978 (AB 32:1055, 1978); 200 at Lake Cuyamaca on 17 April 1964 (AFN 18:487, 1964) and on 15 April 1978 (AB 32:1055, 1978). Bonaparte's Gulls occur very rarely in the Anza-Borrego Desert during April: Vallecito, 14 April 1924 (SD 2855); three reports in ABDSP file.

Fall migrants arrive in late October, but the early dates are difficult to ascertain because a few birds summer in some years. One on the Silver Strand on 17 October 1976 (G. McCaskie) could have spent the summer locally, but 28 at the Santa Margarita River mouth on 25 October 1971 (A. Fries) were certainly newly arrived migrants. No definite migration peaks have been described yet for fall, but in spring, numbers of Bonaparte's Gulls increase during March, peak in April, and decrease in May. Most depart by mid-May, but 50 were still at La Jolla on 17 May 1976 (J. Dunn), and two adults in breeding plumage were at San Elijo Lagoon on 4 June 1977 (P. Unitt).

Numbers of Bonaparte's Gulls remaining through the summer vary considerably from year to year. In some summers, none is reported; maxima are 10 at San Elijo Lagoon on 3 July 1977, 10 at the San Dieguito River mouth on 16 August 1977 (J. Dunn), four in the Tijuana River Valley on 11 and 16 August 1977, and five at Lake Henshaw on 29 July 1978 (P. Unitt).

HEERMANN'S GULL*Larus heermanni* Cassin

Abundant non-breeding visitor in summer, fall, and winter; uncommon to locally common in spring. Heermann's Gulls are birds of the coastline and offshore waters, foraging primarily on the ocean within 8 km (5 miles) of land. They habitually follow and annoy Brown Pelicans, seeking to scavenge any prey dropped by the larger birds. Heermann's

Gulls rest on rocky cliffs or shorelines and on sandy beaches. They are fairly common to common inside San Diego and Mission Bays, but rare in lagoons which are not inundated by the tides (one at Batiquitos Lagoon on 19 July 1978, P. Unitt). The species is casual inland: one at a pond on Otay Mesa 16-17 October 1979 (E. Copper) and another at Lake Henshaw on 18 January 1980 (AB 34:306, 1980). One at Jacumba on 14 July 1968 (AFN 22:649, 1968) was undoubtedly a vagrant from the Gulf of California, rather than the Pacific coast; it occurred at a time when several Heermann's Gulls were found at the Salton Sea.

Very little information is available on the annual cycle of variation in Heermann's Gull numbers, but the post-breeding influx evidently begins in late June or early July, as indicated by 40 at the Santa Margarita River mouth on 23 June 1978 (P. Unitt) and 60 at San Elijo Lagoon on 7 July 1974 (SEL surv.). Winter maxima are 181 off Oceanside on 1 January 1979, 250 from Mission Bay to 10 km (6 miles) off La Jolla on 24 January 1978, and 400 on the ocean between Point Loma and Imperial Beach on 16 December 1978 (D. Povey). Most Heermann's Gulls depart during March. Only small numbers remain through spring along most of the coast of San Diego County, but concentrations can still be found then on the rocky shorelines of Point Loma and La Jolla, with up to 50 at La Jolla on 8 May 1977 (P. Unitt).

RING-BILLED GULL*Larus delawarensis* Ord

Abundant migrant and winter visitor; fairly common as a non-breeder through the summer. Ring-billed Gulls are very widespread, occurring along beaches, in bays, lagoons, and estuaries, on inland ponds and lakes, in agricultural fields, at garbage dumps, and wherever refuse is available to them. The one aquatic habitat which they do not exploit is the open ocean: the species is very rare more than a mile or two from the coast. Typical numbers for migration or winter are: 375 at San Elijo Lagoon on 3 February 1974 (SEL surv.), 200 at the San Diego River mouth on 19 March 1978, 500 at Whalen Lake on 18 February 1978, 150 at Lake Hodges on 21 November 1979, 30 at Lake Henshaw on 5 and 18 November 1978 (P. Unitt), and 450 at the Otay dump on 20 December 1975 (G. McCaskie).

The seasonal cycle of numbers of Ring-billed Gulls needs more study, taking into account the different age classes, particularly juvenal. The species gradually increases in numbers from July through the fall, but when the earliest migrants arrive is not yet known. In spring, most if not all migrants depart by mid-May. In summer, the species has been reported only along the coast. Representative numbers of summering birds are 12 at the Santa Margarita River mouth on 3 June 1972 (A. Fries), five at San Elijo Lagoon on 1 June 1975 (SEL surv.), and 12 on the Silver Strand on 14 June 1978 (P. Unitt).

MEW GULL

Larus canus brachyrhynchus Richardson

Fairly common to common but rather localized winter visitor; accidental in summer. The Mew Gull is a coastal species, occurring in largest numbers on sandbars at river and estuary mouths. Devillers et al. (1971) summarized the status of the species in the San Diego area, reporting that "the total population probably does not exceed 100 birds." They cite 40 at the San Diego River mouth and 40 at the Tijuana River mouth on 14 February 1971 as typical for those localities. Quite exceptional were 200 at the San Diego River mouth on 25 January 1963 (G. McCaskie). In northern San Diego County, substantial numbers have been found at the San Luis Rey River mouth (35 on 31 December 1977) and at sewage ponds near the Santa Margarita River mouth (22 on 27 December 1977, A. Fries). Mew Gulls are uncommon elsewhere along the coast, and at reservoirs and garbage dumps as far as about 11 km (7 miles) inland, as at Chollas Reservoir (one on 24 December 1977, P. Unitt), Sweetwater Reservoir (five on 10 March 1963, G. McCaskie) and the Otay dump (two on 10 March 1974, J. Dunn).

The species occurs primarily from late November to late March, though it does not reach peak numbers until early January (Devillers et al. 1971). The earliest birds arrive in late October or early November: 15 October (1955, one at Oceanside, AFN 10:57, 1956) is the earliest reported date. In spring, 25 April (1976, one at the San Diego River mouth, AB 30:891, 1976) and 4 May (1962, one at the same locality, G. McCaskie) are the extremes. Single Mew Gulls have been found twice in summer: 31 July 1922, Mission Bay (SD 2351), and 6-30 July 1977, San Diego Bay at Chula Vista (AB 31:1190, 1977).

CALIFORNIA GULL

Larus californicus Lawrence

Abundant migrant and winter visitor, rare or uncommon as a non-breeder in summer. The California Gull is the most widely occurring gull in San Diego County, frequenting the open ocean, beaches, bays, estuaries, lagoons, garbage dumps, agricultural fields, and freshwater ponds and lakes as far inland as Lake Cuyamaca. Records illustrating the distribution and abundance of the species are: 250 from Mission Beach to 11 km (7 miles) off La Jolla on 21 February 1978, 150 at the Santa Margarita River mouth on 15 October 1978, 500 at the Oceanside dump on 31 December 1977, 400 at the San Diego River mouth on 19 March 1978 (P. Unitt), 6500 at the Otay dump on 16 December 1978 (G. McCaskie), 800 at Sweetwater Reservoir on 18 December 1976 (W. T. Everett), and 25 at Lake Henshaw on 5 September 1978 (B. Cord).

The migration and seasonal variations in abundance of California Gull are still poorly understood. Juvenal birds evidently arrive by the end of July, as indicated by two at Lake Cuyamaca on 29 July 1978, and one at Lake Henshaw on 29 July 1979 (G. McCaskie). Older birds may ar-

rive earlier in the summer, possibly as early as early July. Six were at the Santa Margarita River mouth on 5 July 1978, where none had been present in June. Numbers gradually increase during the late summer and fall, to reach a winter maximum. The spring exodus takes place in April and early May. At Lake Henshaw, 150 on 1 April 1978, considerably more than were there either earlier or later in the spring, may indicate a passage of spring migrants. The latest date for a spring migrant is 17 May (1978, one at the Tijuana River mouth).

The status of California Gull in San Diego County through midsummer is obscurely known. A few birds have been found on the coast in June (single individuals at San Elijo Lagoon on 27 June 1976, 4 June 1977, and 29 June 1977, P. Unitt). Thirty at Lake Cuyamaca on 25 June 1978 (G. McCaskie) were probably summering locally.

HERRING GULL

Larus argentatus smithsonianus Coues

Very common to abundant winter visitor, accidental in summer. Herring Gulls are partial to garbage dumps, but also frequent beaches, bays, estuaries, and the open ocean. They visit lakes in the coastal lowland fairly commonly to commonly. Some records indicating the distribution and maximum abundance of the species are 100 from Mission Beach to 7 miles off La Jolla on 21 February 1978 (D. Povey), 123 at the south end of San Diego Bay on 18 December 1976 (M. Evans), 30 at Whalen Lake on 1 January 1977, 850 at the Otay dump on 20 December 1975 (G. McCaskie), 50 at Sweetwater Reservoir on 5 February 1977, and five at Santee Lakes on 14 February 1975 (J. Dunn). The Herring Gull has been noted once farther inland, at Lake Cuyamaca on 25 April 1978 (AB 22:1055, 1978).

The species occurs primarily from late October to early April. The earliest recorded dates are 23 September (1979, one at San Diego Bay, AB 34:201, 1980) and 6 October (1976, two on the Silver Strand, J. Dunn); latest are 25 April (1978, one at the Santa Margarita River mouth, P. Unitt; and at Lake Cuyamaca, cited above) and 17 May (1976, one at La Jolla, J. Dunn).

The only record in summer is of a single bird near Imperial Beach on 22 June 1980 (AB 34:930, 1980).

GLAUCOUS-WINGED GULL

Larus glaucescens Naumann

Fairly common winter visitor, very rare in summer. Glaucous-winged Gulls are found along beaches, in bays and estuaries, and on the ocean. They frequent garbage dumps and reservoirs within a few miles of the coast, occurring regularly as far inland as Chollas Reservoir, Sweetwater Reservoir, and the Otay dump. Exceptionally far inland was one collected at Lower Otay Lake on 27 December 1933 (SD 16417). Devillers et al. (1971) summarized the status of the species in the San Diego area, reporting that the annual winter population here varies from 100 to 300

birds. For single localities, six at the San Luis Rey River mouth on 8 December 1973 (A. Fries), 20 at Chollas Reservoir on 20 December 1975 (S. Wise), and 15 at Sweetwater Reservoir on 10 March 1963 (G. McCaskie) are representative.

Glaucous-winged Gulls arrive in early November (29 October 1977, one at the Oceanside harbor, B. Cord, is the earliest report), peak in late January and February, and decline during March. The species is seen regularly through early April (10 at the Otay dump on 7 April 1968, Devillers et al. 1971), and rarely through mid-May (one at La Jolla on 17 May 1976, J. Dunn; one at Mission Bay on 20 May 1919, SD 30118). Single individuals have been noted later into the summer on six occasions: three times on San Diego Bay, twice at Buena Vista Lagoon (26 June 1973, AB 27:919, 1973; 17 June 1979, AB 33:897, 1979), and once at the Santa Margarita River mouth (12 June – 10 July 1972, A. Fries).

WESTERN GULL

Larus occidentalis Audubon subsp.

Abundant to very abundant throughout the year as a non-breeder; a few pairs nest locally. Western Gulls are ubiquitous in salt water habitats: sandy beaches, rocky shores, bays, estuaries, and the open ocean. They occur inland a short distance at garbage dumps, fresh-water ponds, and reservoirs as far east as Chollas Reservoir, Sweetwater Reservoir, and the Otay dump. Records such as 350 between San Diego and San Clemente Island on 20 May 1978 (P. Unitt), 1500 at the Santa Margarita River mouth on 1 July 1971 (A. Fries), and 1500 at the Otay dump on 16 December 1978 (G. McCaskie) illustrate the species' maximum recorded abundance. Seasonal variations in the abundance or the ratios among the age classes of Western Gull have yet to be investigated.

Miller (1936) observed an adult feeding a chick on the cliffs at La Jolla on 25 July 1935, and a set of eggs was collected there on 13 May 1935 (WF 72059). A set of eggs in SBCM (17821) was collected at "San Diego" on 23 May 1941. Western Gulls nest regularly on cement pilings in San Diego Bay adjacent to North Island and on the shore of North Island itself; eight pairs had eggs or chicks there on 21 June 1978 (P. Unitt).

Subspecies: The vast majority of the Western Gulls occurring in San Diego County, including the local breeding birds, are the dark-mantled, pink-legged *L. o. wymani* Dickey and van Rossem. Immatures and subadults of the paler-mantled *L. o. occidentalis* Audubon reach San Diego rarely (Devillers et al. 1971). Juvenals banded on the Farallon Islands (the southernmost breeding station of nominate *occidentalis*) on 11 June 1968 and 11 June 1969 were recovered at San Diego on 27 October 1968 and at Ocean Beach on 31 October 1969 respectively (Smail 1969). An immature (SD 37626) collected in Balboa Park on 23 December 1969 appears closest to nominate *occidentalis*.

YELLOW-FOOTED GULL

Larus (occidentalis) livens Dwight

Casual vagrant from the Gulf of California; four records. An adult was collected at Mission Bay on 23 June 1966 (SD 36001). One was seen at the Tijuana River mouth on 7 December 1978, and another was at the Otay dump on 19 January 1979 (AB 33:314, 1979). Two at the Otay dump from 13 to 28 February 1981 were photographed (AB 35:336, 1981).

THAYER'S GULL

Larus thayeri Brooks

Uncommon to fairly common winter visitor. Thayer's Gulls have been found in substantial numbers only at garbage dumps near the coast, with a maximum of 50 at Otay on 10 February 1968 and 20 December 1975 (G. McCaskie). The species also visits estuaries and bays in small numbers (three at the Oceanside Harbor on 28 December 1980, A. Fries; two at the San Diego River mouth on 1 December 1978; six on the Silver Strand on 28 January 1978, P. Unitt). Devillers et al. (1971) reported an annual wintering population in the San Diego area of 100–150 birds.

Thayer's Gulls arrive in late October or early November; their numbers increase during November and December, peak in January and February, and decline during March (Devillers et al. 1971). Extreme dates are 17 October (1976, one at the south end of San Diego Bay) and 10 April (1971, three on the Silver Strand, G. McCaskie).

GLAUCOUS GULL

Larus hyperboreus barroianus Ridgway

Very rare winter visitor. Glaucous Gulls have been found most often at garbage dumps, but have also been noted at reservoirs and along beaches. Recorded localities are Sweetwater Reservoir (one on 10 March 1963, AFN 17:358, 1963), Balboa Park (one on 23 March 1964, AFN 18:387, 1964), Silver Strand (one from 26 December 1965 to 22 January 1966, SD 36019, AFN 20:459, 1966), La Jolla (one from 31 December 1967 to 2 January 1968, AFN 22:478, 1968), San Diego (one on 22 December 1967, AFN 22:478, 1968), Otay (six times), Point Loma (one on 20 May 1973, AB 27:820, 1973), and Chollas Reservoir (one on 18 December 1976, AB 31:882, 1977). The only record of more than a single individual is of two at Otay 3–18 February 1968 (AFN 22:478, 1968).

Extreme dates for Glaucous Gull are 18 December (at Chollas Reservoir, cited above) and 31 March (1968, one at Otay, AFN 22:478, 1968), except for the very late bird at Point Loma on 20 May. The specimen (SD 2084) collected on 16 May 1919 and reported by Johnston (1955) as a Glaucous Gull is actually a very worn and bleached Glaucous-winged Gull (Devillers et al. 1971).

Jehl (1971) reported a hybrid Glaucous x Herring Gull collected at the former dump in Balboa Park on 24 March 1969 (SD 37028), and G. McCaskie saw another at Otay on 10 March 1974.

BLACK-LEGGED KITTIWAKE*Rissa tridactyla pollicaris* Ridgway

Irregularly uncommon to abundant winter visitor. Kittiwakes are pelagic gulls, but are most abundant within 16 km (10 miles) of the coast. Large numbers may occur also along the sea bluffs of Point Loma or La Jolla, when the birds come to shore to rest, or are blown inshore by strong winds. In winters when the species is abundant on the ocean, it occurs fairly commonly to commonly along sandy beaches, and uncommonly to fairly commonly inside San Diego and Mission bays. Maximum recorded abundance of Kittiwakes is illustrated by 350 on the ocean within 8 km (5 miles) of shore from San Diego to Del Mar on 28 March 1976 (P. Unitt), 200 at La Jolla on 16 April 1976, 100 at Point Loma on 16 April 1977 (G. McCaskie), 25 at the San Diego River mouth on 20 March 1976, 10 in Mission Bay on 17 March 1977 (J. Dunn), and four at the San Luis Rey River mouth on 2 February 1970 (A. Fries). A specimen (SD 39849) from Lake Murray on 3 February 1976, and one seen at Lake Henshaw on 15 January 1981 (AB 35:336, 1981), are the only inland records.

The earliest date known for Black-legged Kittiwakes is 16 November (1962, one on San Diego Bay, AFN 17:69, 1963), but not until late December or January do they become abundant. In spring, most depart in April and early May, but in 1976, a year of exceptional abundance for the species, large numbers remained until mid-May (60 at La Jolla on 17 May, J. Dunn). A few persist occasionally through the summer and fall, particularly after a flight year: six at La Jolla on 11 July 1976 (G. McCaskie), one at La Jolla on 25 September 1974 (SD 38977), and one at the Oceanside Harbor on 8 October 1976 (A. Fries).

SkimmersFamily *Laridae*

SUB-FAMILY RYNCHOPINAE

BLACK SKIMMER*Rynchops niger niger* Linnaeus

Common resident in south San Diego Bay, very rare elsewhere along the coast. A small but rapidly growing colony of Black Skimmers has settled on the dikes of the saltworks at the south end of San Diego Bay. The birds usually remain in the saltworks or on the nearby mudflats at the south end of the Silver Strand, but rarely disperse farther north on the Strand, or north on the east side of the Bay to the Sweetwater River mouth. The first record was of a single individual 18–19 September 1971 (AB 26:121, 1972). The species was next noted in fall 1972, when up to four birds were present from 7 September to 11 November (AB 27:121, 1973). One bird spent the winter from 25 August 1973 to 2 March 1974 (AB 28:108 and 693, 1974), and the next winter, two remained from 14 December 1974 to 27 March 1975 (AB 29:742, 1975).

In the summer of 1976, the one pair of Skimmers nested and successfully raised three young (AB 30:1004, 1976). After this first nesting, the breeding and wintering population increased each year. Up to eight birds remained through the winter of 1976–1977, and three pairs nested in summer 1977 (AB 31:374 and 1190, 1977). The following winter, 12 birds were present, and in summer 1978, the six pairs fledged a total of seven young (AB 32:400 and 1209, 1978). By the winter 1978–1979, the population had reached 24 individuals. In 1979, 14 pairs fledged at least 25 young (AB 33:314 and 897, 1979), and a maximum of 42 birds was counted on 17 December (B. Cord). About 30 pairs nested during summer 1980 (AB 34:930, 1980) and up to 80 individuals remained to winter (AB 35:336, 1981). At least 25 pairs nested in 1981 (E. Copper). Clearly, both local production and a continuing influx from outside San Diego County are augmenting the population.

Skimmers were first noted away from San Diego Bay in 1979, when one was at the San Diego River mouth on 20 May, one was at the Tijuana River mouth on 9 June (G. McCaskie), and two adults and two juvenals were at Baticuitos Lagoon 5–9 August (AB 33:897, 1979). Single individuals were observed at Buena Vista Lagoon on 16 April 1980 and at the Santa Margarita River mouth on 21 April 1980 (AB 34:816, 1980) and 3 May 1981 (D. Parker).

An adult female found dead in the saltworks on 31 July 1977 (SD 40388) is the only specimen for San Diego County.

TernsFamily *Laridae*

SUB-FAMILY STERNINAE

CASPIAN TERN*Sterna caspia* Pallas

Common to locally abundant resident, with one breeding colony at the south end of San Diego Bay. Caspian Terns are abundant around their nesting colony, and common elsewhere along the ocean shore, in bays, estuaries, and lagoons, and at freshwater ponds and lakes in the coastal lowland. Typical numbers of non-breeders are 45 at Baticuitos Lagoon on 15 May and 20 August 1978, 50 in the Tijuana River Valley on 13 August 1978, 35 at Lake Hodges on 30 August 1978, and 10 at Santee Lakes on 26 November 1977. Exceptional are 100 at the San Diego River mouth on 7 April 1978 (P. Unitt) and 300 on San Diego Bay at the Naval Amphibious Base on 16 March 1963 (G. McCaskie). Caspian Terns are regular also at Lake Henshaw. Willett (1933) reported that J. B. Dixon found 15 pairs summering there in 1932; more recently, up to 10 individuals were present on 29 July 1978 (P. Unitt). The species has been noted also once in the Anza-Borrego Desert: six birds flying over Borrego Springs on 2 April 1977 (G. McCaskie). Seasonal variations in the numbers of Cas-

pian Terns in San Diego County are not yet well understood. Data from San Elijo Lagoon indicate the species is rare in December and January, increases to a peak in April, declines somewhat in May and June, reaches another peak in July, then decreases throughout the fall. The apparent decline in numbers along most of the coast in June may reflect a concentration of the population into the nesting colony.

Nesting of Caspian Terns on the dikes of the saltworks at the south end of San Diego Bay had started by 1941, when E. E. Sechrist collected a set of eggs on 23 April (WF 28472), and recorded "colony of 78 pair." In 1943, R. E. Dixon noted 75 nests on 25 April (WF 28471). Emblen (1954) estimated approximately 100 nests and 250 adult birds on 18 May 1953. M. Evans counted 189 nests during the 1974 season, 209 nests in late May 1977. F. Schaffner estimated 412 pairs nesting in 1981. The colony is occupied from mid-April through early August. Egg dates (15), 16 April – 12 June. After fledging, the juvenal birds follow their parents for quite some time, and disperse all along the coast and through the coastal lowland of San Diego County.

Caspian Terns have increased greatly in abundance since 1900. One collected at San Diego in December (year not reported, Saunders 1896) is the only definite nineteenth-century record for all southern California. Willett (1933) reported the species to winter "in small numbers," and lists several observations north of San Diego County, indicating a gradual increase during the first third of the twentieth century. In our area, the next definite records are the birds reported in 1932 at Lake Henshaw mentioned above, and one specimen collected "near Upper Otay Dam" on 25 June 1937 (SD 17513). The construction of the saltworks at the south end of San Diego Bay provided nesting habitat for the colony which, as noted above, was well established in 1941.

ROYAL TERN

Sterna maxima maxima Boddaert

Fairly common visitor in fall, winter, and spring, uncommon in summer. Royal Terns keep to the coastline, foraging in bays, estuaries, lagoons, and in the open ocean near shore, and resting on beaches and mudflats. They are rare in pelagic waters but are regular in small numbers at the south end of San Clemente Island (10 on 9 September 1978). Royal Terns never wander inland, and are rare even at the upper ends of non-tidal lagoons (one at Batiquitos Lagoon on 11 and 19 July and 20 August 1978). Some records indicating the distribution and maximum abundance of the species are: 14 at the Santa Margarita River mouth on 6 October 1978 (P. Unitt), 27 at San Elijo Lagoon on 7 July 1974 (SEL surv.), 20 at La Jolla on 27 April 1976, 35 at the San Diego River mouth and Ocean Beach pier on 28 April 1975 (J. Dunn), 30 on San Diego Bay on 23 March 1963, and 40 at the Tijuana River mouth on 4 May 1963 (G. McCaskie). Royal Terns occur in San Diego Coun-

ty throughout the year, but tend to be less numerous from mid-May through June. Concentrations are noted occasionally even then, such as 25 at the San Diego River mouth on 17 May 1976 (J. Dunn).

Gallup and Bailey (1960) report finding a nest with an egg in the Elegant and Caspian Tern colony at the south end of San Diego Bay on 12 May 1959. They collected the egg on 20 May, but I have been unable to trace its present whereabouts, and suspect a misidentification. The report of over 30 nests in late May 1960 (AFN 14:447, 1960) certainly resulted from confusion with Elegant Terns.

The Royal Tern has declined in numbers in California during the 1900s. Fifty years ago, it was the commonest large tern; today, it is vastly outnumbered by the Caspian and Elegant. From 1892 through 1934, 16 Royal Terns were collected and deposited in SD compared to three Elegants and no Caspians during this same period. However, old reports should be evaluated critically, since Royal and Elegant Terns are easily confused. L. Miller's (1936) description of Royal Tern as "fairly abundant" and "appearing as early as 21 July" in 1935 seems suspiciously similar to the present status of Elegant Tern.

SANDWICH TERN

Sterna sandriensis Latham

Accidental, one sight record. One in the tern colony at the south end of San Diego Bay from 11 to 15 May 1980 – unsuccessfully courted Elegant Terns (F. Schaffner, M. Evans, and others; AB 34:816, 1980).

Subspecies: *S. s. acullarida* Cabot is the race occurring in the Western hemisphere.

ELEGANT TERN

Sterna elegans Gambel

Abundant summer resident in the single nesting colony at the south end of San Diego Bay; elsewhere along the coast, a fairly common to common visitor in spring and early summer, becoming abundant in late summer and early fall, then uncommon to rare by late fall. Elegant Terns are strictly associated with salt water. They never venture farther inland than the upper ends of the coastal lagoons. They customarily rest in flocks on mudflats, sandbars in lagoons, or beach dunes, and forage in the bays or especially in the ocean within sight of shore. Elegant Terns are rare beyond about 35 km (22 miles) from land, though three reached the south end of San Clemente Island on 10 September 1977 (G. McCaskie).

Elegant Terns return each year in early or mid-March; 3 March is the earliest reported arrival date (1968, AFN 22:478, 1968). They soon become abundant at the colony site, but reach common status elsewhere in spring only at a few favored localities, such as the Tijuana and Santa Margarita river mouths (50 on 11 April 1978 and 25 on 17 April 1978 respectively, P. Unitt). A count of 190 at San Elijo Lagoon on 13 April 1980 (SEL surv.) is exceptional.

Limited evidence suggests that numbers of Elegant Terns outside the nesting colony increase to a peak in April, then decrease in May and early June, until post-breeding birds begin arriving from the south in small numbers in late June. By mid-July the species is abundant all along the coast. It reaches its peak abundance in August and September, in numbers such as 2000 at San Elijo Lagoon on 4 August 1974 (SEL surv.), 1000 at San Diego Bay on 29 September 1962 (G. McCaskie), and 2500 at the Tijuana River mouth on 3 September 1977 (P. Unitt). Its numbers decrease through October and November, to mid-December when the species is very rare. The latest reliable date is 23 December (1962, two at San Diego Bay, AFN 17:359, 1963); one reported from San Diego on 29 December 1955 (AFN 10:283, 1956) and three at the Naval Training Center on 2 January 1956 (Monroe 1956) might have been misidentified Royal Terns.

Elegant Terns nest in a single dense colony on the dikes of the saltworks at the south end of San Diego Bay. The Elegants' nests are surrounded by or interspersed with Caspian Tern nests. This is the only colony of Elegants outside of Mexico. The colony was originally reported by Gallup and Bailey (1960) who discovered the first five nests on 2 May 1959, and a maximum of 31 nests on 23 May 1959. Since that time, the colony has gradually grown in size. G. McCaskie noted 60 nests on 18 May 1963. M. Evans counted 144 nests during the entire 1974 season (this may include some second attempts) and 237 nests in late May of 1977. Fred Schaffner found 600 in 1980 and 861 in 1981. Egg dates (12), 18 April - 6 May; G. McCaskie found three nests with eggs on 8 April 1962.

The establishment and growth of the Elegant Tern colony at San Diego is part of the long-term pattern of growth in the species' numbers and expansion of its range in California. Early in this century, the Elegant Tern was considered a rare and irregular visitor to California. The first record from San Diego County was by Bishop (1905), who reported a specimen collected at Pacific Beach on 21 September 1904. The next definite record is Abbott's (1927e), who reported seeing them "by the score" at La Jolla in August 1926, and eight specimens collected off Point Loma in September of the same year. Monroe (1956) stated that by 1951 the species had become "regular and common". He reported maxima of "over 500" on the Silver Strand on 21 September 1953, and 600 at the Naval Training Center on North San Diego Bay and "well over 700" on the Silver Strand on 26 September 1954. This expansion of the species to the north may be related to the reduction of several nesting colonies in Baja California to the single known colony on Isla Rasa (lat. 28°44'N.), Gulf of California.

COMMON TERN

Sterna hirundo hirundo Linnaeus

Abundant fall migrant, rare winter visitor, common to very common spring migrant, common to very common as a non-

breeding visitor in summer on San Diego Bay. Common Terns are most numerous on the open ocean within 16 km (10 miles) of shore, and on beaches around bays and estuaries where migrant flocks come to rest. The species is less numerous but still common farther out to sea and inside the bays and lagoons. By far the largest numbers are seen in fall. One thousand were estimated migrating south off La Jolla on 17 August 1977 (J. Dunn), and 750 were resting on the beach at the Santa Margarita River mouth on 22 August 1978 (P. Unitt). The only inland reports of fall migrant Common Terns are of two at Lake Hodges on 5 August 1979 (G. McCaskie) and one at the same locality on 2 September 1979 (D. Parker). Because summering and wintering birds are present, arrival and departure dates cannot be determined precisely. Fall migration begins in early or mid-July, and is well underway by late July. After a peak from mid-August to early September, numbers decline through October and November. Large concentrations sometimes remain into early and mid-November (125 on San Diego Bay on 9 November 1962, G. McCaskie; 100 on the Silver Strand on 12 November 1976, J. Dunn), but the species is uncommon by early December. Most of the few birds seen in December and even early January do not remain the entire winter.

In some winters, a few birds can be found around San Diego Bay or at the San Diego River mouth, such as two at Coronado on 12 February 1964 (AFN 18:387, 1964) and three at the San Diego River mouth 25 January - 5 April 1969 (G. McCaskie, AFN 23:521, 1969). Exceptional were 15 at Shelter Island on 18 and 31 January 1975 (J. Dunn, AB 29:742, 1975).

Spring migrant Common Terns arrive each year in mid-April, with 12 April (1969, one at San Elijo Lagoon, J. Dunn) being the earliest recorded date for a probable migrant. The species is not nearly so numerous in fall as in spring; 300 at the San Diego River mouth on 2 May 1965 (G. McCaskie) was an exceptionally large concentration. Migrants have been seen at least as late as 20 May, but the late limits of spring migration are not well known. There is one spring record of a bird a short distance inland: an adult collected at Bonita on 2 May 1931 (SD 14529).

Each summer, a flock of immature Common Terns remains on San Diego Bay along the Silver Strand. Usually there are 30-60 birds, but as many as 100 were observed on 9 June 1968 (G. McCaskie), and 150 on 23 June 1967 (AFN 21:605, 1967). An adult in breeding plumage there on 15 June 1976 (G. McCaskie) was exceptional.

ARCTIC TERN

Sterna paradisaea Pontoppidan

Common to very common fall migrant and uncommon spring migrant on the open ocean. Arctic Terns are strictly pelagic in San Diego County, rarely occurring within 8 km (5 miles) of shore. One in the entrance channel of Mission Bay on 11 September 1977 (J. Dunn) was exceptional. The species has never been satisfactorily identified on shore;

one reported from San Diego Bay on 13 September 1962 (AFN 17:69, 1963) was probably a misidentified Common Tern. In fall, Arctic Terns are numerous at least from late August through mid-September, but not enough pelagic observations have been made outside of this period to determine if this represents the actual peak of migration. The highest numbers recorded for trips from San Diego to San Clemente Island are 250 on 14 September 1974, and 350 on 11 September 1976 (G. McCaskie). Extreme dates are 27 July (1968, one collected of seven seen 128 km [80 miles] west of San Diego, SD 36752, AFN 22:649, 1968) and 25 October (1959, 30 near San Clemente Island, AFN 14:173, 1960), with one exceptionally late bird identified at the 43 fathom bank off San Diego on 10 December 1977 (J. Dunn).

In spring, Arctic Terns have been observed only a few times, but frequently enough from mid-May through early June to suggest the species is regular, though uncommon, during that period. Up to three individuals per day have been found in spring, with an exceptional 10 between San Diego and San Clemente Island on 19 May 1973 (AB 27:820, 1973) and 15 on 16 May 1981 (E. Copper). Dates extend from 14 May (1977, three between San Diego and San Clemente Island, AB 31:1048, 1977) to 7 June (1978, one off San Diego, AB 32:1209, 1978). The reports of 30 near San Clemente Island on 9 May 1959 (AFN 13:401, 1959) and of 24 off San Diego on 11 May 1961 (AFN 15:438, 1961) surely refer to misidentified Common Terns.

FORSTER'S TERN

Sterna forsteri Nuttall

Common to abundant resident, with one breeding colony at the south end of San Diego Bay. Forster's Terns are common along the coast in bays, estuaries, lagoons, and on the ocean near shore, but do not occur more than two or three kilometers out to sea. They frequent fresh water ponds and lakes in the coastal lowland, but the only record farther inland is of a single bird photographed at Lake Henshaw on 17 September 1978 (P. Unitt). Some estimates illustrating the distribution and maximum abundance of non-breeding birds are: 350 at the Santa Margarita River mouth on 8 May 1972 (A. Fries), 170 at San Elijo Lagoon on 6 July 1975 (SEL surv.), 350 at the San Diego River mouth on 7 April 1978, 60 at Lake Hodges on 15 October 1978, and 15 at Lower Otay Lake on 21 April 1978 (P. Unitt). Seasonal variations in the abundance of Forster's Tern are not well understood. The species is common to very common on the coast throughout the year, but seems to be more numerous in March and April in spring migration, and from July to September in fall migration. Inland, Forster's Tern is most plentiful in fall, but more information is needed. For example, it is not known if the species remains on inland lakes through the summer.

The nesting colony in the salt works at the south end of San Diego Bay was first noted on 5 May 1962 by Gallup (1963). In WF is a set of eggs collected there on 28 April 1964, and 15 sets collected on 3 May 1964. G. McCaskie

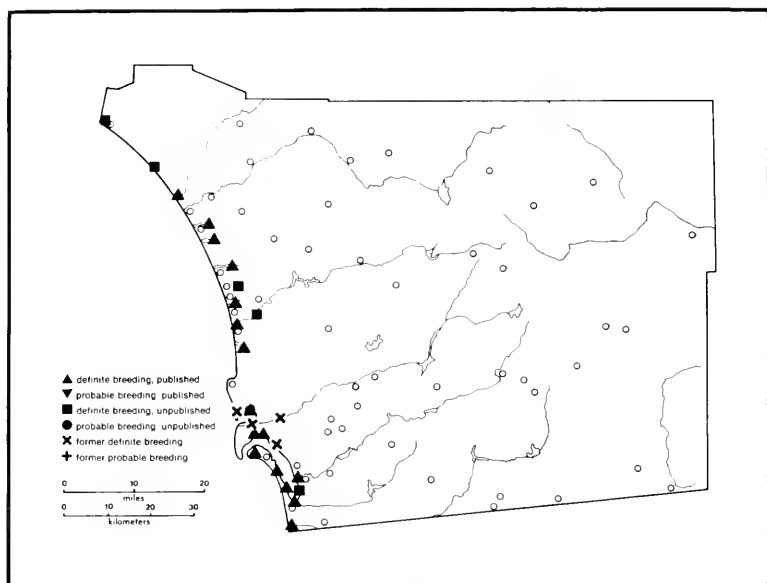
estimated 400 pairs on 19 May 1963, and 100 nesting pairs were reported in the summer of 1967 (AFN 21:605, 1967). M. Evans counted 256 nests during the 1974 breeding season, possibly including some second attempts by birds whose first nests had failed. The population in 1977 was substantially larger, as Evans counted 415 nests in late May. On 4 July 1978, a count of part of the colony revealed 65 nests with eggs and 180 chicks, many ready to fledge (E. Copper and P. Unitt).

LEAST TERN

Sterna (albifrons) antillarum browni Mearns

Fairly common to common but very localized summer resident and migrant. The status and distribution of the Least Tern are known better than any other bird of San Diego County, as a result of annual surveys since 1973, sponsored by the California Department of Fish and Game, and conducted by Kristen Bender, Barbara Massey, Paul Jorgensen, Philip Unitt, and especially Elizabeth Copper. These studies appeared from 1973 to 1978 as Job Final Reports of the California Department of Fish and Game. The following account is based primarily on those reports, and on much additional information supplied by Elizabeth Copper.

Least Terns nest colonially along the coast. Originally, they established colonies on the barrier dunes at river mouths, lagoon entrances, and along the sandy strips separating Mission and San Diego bays from the ocean (Mission Beach and Silver Strand). The shallow scrapes that function as nests were made in the sand in areas where there was sparse coastal strand vegetation to afford the young chicks some protection from the sun and predators. Within the colony, the nests were well separated, a strategy for making the nests difficult to discover and reducing losses by predation. With urbanization and increasingly intense human use of the beaches, the terns have been forced into other habitats. Only at the Aliso Creek, Santa Margarita, and Tijuana river mouths are colonies still located on beach dunes. Most colonies are now found on dry mudflats or alluvial sand at the upper ends of lagoons in the north county, or on fill land created with dried dredge spoil around Mission and San Diego bays. The terns also nest in cracks in asphalt pavement near the runways at North Island Naval Air Station, and until the surface was repaved in 1981, they nested in similar situations at Lindbergh Field. Least Terns are evidently flexible and opportunistic in their choice of colony sites, nesting wherever they can find patches of fairly flat, sandy ground with little or no vegetative cover. Their opportunistic habits are illustrated by a colony of 55 pairs nesting on the Chula Vista Wildlife Reserve island in southeast San Diego Bay in 1980, the first year after this artificial island was created. On three occasions Least Terns are known to have nested substantial distances from salt water: two pairs in Mission Valley just west of the San Diego Stadium in 1974, one pair in the San Dieguito River Valley at the Whispering Palms Sewage Treatment Plant in 1979, and nine pairs in a vacant lot at the corner of El Camino

MAP 22. Breeding Distribution of Least Tern (*Sterna antillarum*)

Real and Crest Drive in Encinitas in 1981.

As a result of human encroachment on nesting habitat and pressure from predators, the size and distribution of Least Tern colonies changes from year to year. Sites are abandoned if they become overgrown with vegetation, are flooded by high tides or fresh water, have buildings placed on them, or if too many eggs, chicks, or adults are killed by predators. New sites are colonized as harbor development creates flat, sandy fills. From 1973 through 1978 the breeding population of San Diego County remained fairly stable, fluctuating between 400 and 500 pairs. In 1979, E. Copper counted 552 pairs, in 1980, 627 pairs, and in 1981, 425 pairs. The proportion of the San Diego County population to that of California as a whole has varied between 79% and 53%, demonstrating the importance of San Diego County to this endangered subspecies. However, this proportion has consistently declined during the last 10 years, reaching its low in 1981. This suggests that conservation of Least Terns has received inadequate attention in San Diego County, compared to other regions of California. Estimates of the numbers of pairs at each colony site from 1977 through 1981 are summarized in the table.

The earliest spring arrivals usually appear during the second week of April, and are often found at the San Diego River mouth. At many other localities, the terns do not arrive until late April, and not until then do they become numerous anywhere. The earliest spring date is 8 April

(1978, San Diego River mouth, AB 32:1053, 1978). Concentrations of migrant Least Terns are seldom noticed in spring, but R. A. Erickson noted a flock of 81 migrating north at La Jolla on 21 April 1978. During May the birds select their colony sites and begin courtship and egg-laying. The earliest egg that E. Copper has found was laid at north Fiesta Island on 8 May 1979. Eggs are laid in increasing numbers in mid and late May, and the peak of the nesting season is reached in early and mid-June. Younger adults tend to arrive and nest later in the season, and birds that lose their eggs or chicks attempt to nest a second time. The terns may lay as late as late July, but these eggs are inevitably abandoned by mid-August; 8 August 1980 is the latest date E. Copper has seen the birds still incubating. The latest she has seen eggs from which young were successfully fledged is 31 July. These eggs must have been laid in early July since the incubation period is about 28 days.

During incubation, Least Terns do most of their foraging in the ocean, normally remaining within a few kilometers of land. J. Dunn noted two resting on kelp 37 km (23 miles) off San Diego on 1 May 1976, an exceptional distance offshore. As the chicks hatch and demand frequent feeding, the adults tend to forage closer to the colonies in the bays, lagoons, and rivers. As the young fledge, both adults and juveniles leave the colonies and gather in flocks at favorable feeding areas. These areas of post-breeding concentration change somewhat from year to year, but some areas,

Numbers of pairs of Least Terns nesting at colonies in San Diego County, 1977-1981.

	1977	1978	1979	1980	1981
San Mateo Creek mouth					1
Aliso Creek mouth			15	65	23
Santa Margarita River mouth	120	30	32	47	63
Buena Vista Lagoon				1	2
Agua Hedionda Lagoon	(13) ^a	11	23	11	
Batiquitos Lagoon	(11) ^a	22	38	25	43
Encinitas					9
San Elijo Lagoon	4	9	12	15	12
Whispering Palms Sewage Treatment Plant			1		
San Dieguito River mouth				4	
Los Peñasquitos Lagoon	14	18	16	14	
Federal Aviation Administration Island	125	135	96	150	95
North Fiesta Island	8	8	15	6	8
Lindbergh Field (San Diego Airport)	25	43	108	71	
Naval Training Center	35	8			
Fifth Avenue Basin	17				
Sweetwater River mouth	40	47	20	12	
Chula Vista Wildlife Reserve				55	95
North Island					
Naval Air Station	(13) ^b	36	75	100	61
Delta Beach, Silver Strand		4	10		
Coronado Cays	17	8	38		
Salt Works, south					
San Diego Bay	69	29	28	16	1
Tijuana River mouth	6	8	25	35	12
TOTAL	480	416	552	627	425

^a Colonies formed late; probably from birds deserting other colonies; not included in total

^b Colony dispersed early in season and birds may have joined other colonies; not included in total

especially the San Luis Rey River mouth, Buena Vista Lagoon, and the Tijuana River mouth are consistently good. In some years the terns from large post breeding flocks at Batiquitos Lagoon (maximum 110 including 20 juvenals on 15 August 1978, P. Unitt) and at the San Dieguito River mouth as well (maximum 140 including 60 juvenals on 14 August 1977, J. Dunn). These flocks may include migrants from outside San Diego County as well.

Least Terns also disperse inland to their greatest extent during July and August. They follow the Santa Margarita River as far as O'Neill Lake, the San Luis Rey River as far as Guajome Lake, Escondido Creek to Lake Val Sereno (12 on 23 July 1975, A. Fries), the San Diego River throughout Mission Valley, and the Sweetwater River to Bonita. They frequent Whalen Lake and the ponds near

Dairy Mart Road in the Tijuana River Valley in especially large numbers (maximum 20 in the Tijuana River Valley on 22 August 1976, J. Dunn). Most Least Terns leave the county during early September, so by mid-September the species is rare. The latest date is 22 September, excluding a remarkably late bird at the San Diego River mouth 27-28 (October 1981 (C. Edwards and E. Copper).

Much has been learned about the habits and migration of Least Terns through the intensive banding program pursued in San Diego County principally by Elizabeth Copper and in Orange and Los Angeles counties by Barbara Massey and Jon Atwood. The birds show little tendency to return to nest as adults to the site where they were hatched, but once they have nested successfully, they prefer to return in subsequent years to the site where they had their first success. Birds banded as chicks in Los Angeles and Orange counties have nested in San Diego County, while a bird banded as a chick in San Diego was seen at the nesting colony at Alameda in 1981. Banding also provides information on longevity: a bird nesting at the Federal Aviation Administration Island in Mission Bay in 1981 had been banded as a chick at the Tijuana River mouth 14 years earlier. The still obscure winter range of the California Least Tern may be discovered by this method as well. In 1981 in Chiapas, southern Mexico, Barbara Massey observed a bird that had been banded in San Diego County.

Unfortunately, little quantitative information is available from earlier years to document the decline of the Least Tern population. The most significant report is by Sechrist (1915a) who observed a "colony of about 1000 pairs of birds breeding all the way from Pacific Beach down to False Bay" [now Mission Bay], with about 500 pairs nesting at the entrance to False Bay. By 1933, Sechrist informed Willett "that the birds are now much less plentiful in San Diego County than formerly." More recently, Swickard (1972) reported that the nesting population at the Santa Margarita River mouth varied from 150 adults in 1969, to 38 in 1970, to 600 in 1971, to 500 in 1972.

This endangered subspecies presents unique conservation problems because of its opportunistic and colonial habits. Least Tern nesting habitat is easy to create; indeed, colony sites are often created inadvertently when new fill land is made around Mission or San Diego bays as a foundation for residential, commercial, or recreational developments. Eventually, however, these patches of bare sand are developed for human use, so there is a continuing reduction of the total amount of nesting habitat available. This forces the remaining population to concentrate into fewer colonies. With a higher density of nests on the site, the colony is more vulnerable to predation. The activity of only a few predators may cause the complete failure of a large colony. Predation was the most frequent immediate cause of low fledging success of Least Terns in San Diego County in 1980 and 1981. The birds are forced to shift from site to site in successive years, so that even tracts which have been specifically set aside as Least Tern

reserves may go unused. Neglected sites may become overgrown with dense vegetation and therefore useless to the terns. With the birds ignoring their reserves, other demands for this valuable land may cause planning agencies to decide to turn the reserve to other uses. Thus the amount of potential Least Tern nesting habitat decreases further, and the cycle driving the bird to extinction continues. Short-term planning by government agencies is the most serious enemy that the Least Tern faces in the long run.

BLACK TERN

Chlidonias niger surinamensis (Gmelin)

Rare spring migrant and non-breeding summer visitor, uncommon fall migrant, casual in winter. Black Terns are found most frequently around brackish lagoons and estuaries and at fresh water ponds near the coast. The species occurs rarely on the salt water of San Diego Bay, and inland at Lake Hodges. More study would probably indicate it occurs occasionally on other lakes in the coastal lowland. Black Terns are also noted rarely but regularly migrating over the open ocean.

From early May through early July only scattered individuals have been reported, except for an unusual 10 at the south end of San Diego Bay on 5 May 1962 (AFN 16:447, 1962). The earliest date reported for a spring migrant is 27 April (1977, one at Buena Vista Lagoon, A. Fries). Black Terns are most numerous from mid-July through mid-September, but even at this season, usually only one or two individuals are at favorable localities. Exceptionally high numbers are five at the Santa Margarita River mouth on 13 August 1972 (A. Fries), 8-10 at Buena Vista Lagoon on 31 August 1957 (AFN 11:429, 1957), and 13 in the Tijuana River Valley on 17 August 1977 (J. Dunn). From late September through late October, Black Terns decline in frequency; late records are of single birds at San Elijo Lagoon 8-11 November 1963 (AFN 18:74, 1964) and at Sweetwater Reservoir 21 November 1958 (AFN 13:66, 1959).

Individuals have been noted six times in winter: San Diego Bay near Shelter Island from 17 December 1966 through 27 January 1967 (AFN 21:458, 1967); San Diego River mouth on 8 April 1967 (AFN 21:541, 1967); San Elijo Lagoon from 11 February to 9 March 1968 (AFN 22:478, 1968; G. McCaskie), Shelter Island from 6 December 1974 through 18 January 1975 (AB 29:742, 1975), Pacific Beach on 31 December 1976, and in the entrance to San Diego Bay on 3 January 1977 (AB 31: 374, 1977; R. L. Pitman).

The Black Tern has decreased in abundance in southern California during the last 40 years. Certainly it can no longer be called "rather common," as did Stephens (1919a). Willett (1933) considered the species a "common migrant" in southern California, and reported several sightings off the coast of San Diego County in August 1931. L. Miller (1936) reported a "flock" 14 km (9 miles) off Point Loma on 28 August 1935.

Auks, etc.

Family Alcidae

COMMON MURRE

Uria aalge californica (Bryant)

Uncommon to fairly common winter visitor; casual summer straggler. Common Murres are birds of the offshore waters, staying out to sea, but with most remaining within 16 km (10 miles) of the coast. They are rarely seen from shore, except when blown in by strong westerly winds. Dead birds often wash up on beaches, however. Typical numbers are three offshore within 3 km (2 miles) of Oceanside on 1 January 1977, six within 11 km (7 miles) of La Jolla on 21 February 1978 (D. Povey), and 15 between San Diego and San Clemente Island on 2 December 1972 (AB 27:663, 1973). In occasional years, much larger numbers invade San Diego County waters; the maxima recorded are 140 off Point Loma on 21 December 1958 (AFN 13: 323, 1959), and 72 just offshore between Point Loma and Imperial Beach on 18 December 1976 (D. Povey).

Late October through early May is the main season for Common Murres. In fall, the earliest dates are 14 October (1972, one off Imperial Beach, AB 27:121, 1973) and 17 October (1969, La Jolla, SD 37452). In spring, late dates are 19 May (1973, three between San Diego and San Clemente Island, G. McCaskie) and 20 May (1978, one in the same area, AB 32:1055, 1978). Common Murres have remained into summer on a few occasions: three near San Clemente Island 31 May - 1 June 1971 (AB 25:801, 1971); one off La Jolla on 22 June 1977; one off Pacific Beach on 6 July 1977 (D. Povey); one off San Diego on 7 June 1978 with two in the same area on 20 June 1978 (AB 32:1209, 1978). Regular occurrence of Common Murres in San Diego County seems to be a fairly recent phenomenon. The species was unrecorded until 1942, when a specimen was collected at Cardiff on 4 February (SD 18950). The next report was in 1956, when Sams and Stott (1959) reported one seen at La Jolla on 23 December. During the following ten years, Common Murres were reported somewhat irregularly, but they have been found annually since 1967.

PIGEON GUILLEMOT

Cepphus columba Pallas

Accidental. Two seen by R. L. Pitman 80 km (50 miles) offshore of San Diego on 1 September 1976 (AB 31:223, 1977) are the only Pigeon Guillemots reported from definitely within San Diego County waters. Other nearby records are of one seen near San Clemente Island on 11 January 1964 (AFN 18: 387, 1964), and of one photographed at the Los Coronados Islands on 6 June 1969 (AFN 23:626, 1969). The latter is the only report of Pigeon Guillemot from Mexico.

Subspecies: Nominate *C. c. columba* is the race breeding

from the Bering Strait around the coasts of Alaska and south to Santa Barbara Island in the Channel Islands.

MARBLED MURRELET

Brachyramphus marmoratus (Gmelin) subsp.?

Accidental, two records. One was photographed in the Mission Bay entrance channel on 29 November 1979 and seen again on 3 December. Two at the Imperial Beach pier on 15 December 1979 were photographed the following day (AB 34: 307, 1980). These Marbled Murrelets occurred at the same time as an exceptional invasion of San Diego County by Ancient Murrelets. The specimen reported from La Jolla (AFN 24:100a, 1970) was subsequently reidentified as a Kittlitz's Murrelet.

Marbled Murrelets range in summer from Alaska south to Monterey, California, and tend not to disperse southward in winter. They are casual south to Santa Barbara, and accidental beyond there. Imperial Beach is the species' southernmost record station. The subspecies which has reached San Diego County is not conclusively known, for lack of a specimen, but it seems likely to have been the North American form, nominate *marmoratus*. However, one *B. m. perditix* (Pallas) specimen from northeastern Siberia was collected at Mono Lake, California, on 9 August 1981 (Jehl and Jehl 1981, SD 41544).

KITTLITZ'S MURRELET

Brachyramphus brevirostris (Vigors)

Accidental, one record. A juvenile "alive but in weakened condition" was picked up on the beach at La Jolla on 16 August 1969 (Devillers 1972). The bird is now preserved as SD 37215. The specimen shows no sign of having been in captivity, and its wing feathers are fully grown. Even in winter Kittlitz's Murrelets do not normally disperse south of their breeding range; this is the only North American record south of Alaska.

XANTUS' MURRELET

Endomychura hypoleuca (Xantus) subsp.

Year-round visitor on the ocean, fairly common in spring and summer, uncommon to rare in fall and winter. Xantus' Murrelets are strictly pelagic, rarely occurring within 8 km (5 miles) of the coast. I know of no instances of the species being identified from shore, and birds closer in than 3–5 km (2–3 miles), such as four off Point Loma on 21 December 1958 (AFN 13: 323, 1959) and one between Point Loma and Imperial Beach on 18 December 1976 (D. Povey) are exceptional.

Xantus' Murrelets are most numerous from March through July, as indicated by 30 between San Diego and Los Coronados Islands on 17 March 1974 (G. McCaskie), 20 off San Diego on 2 May 1970 (AFN 24:645, 1970), and 20 between San Diego and San Clemente Island on 27 July 1968 (AFN 22:649, 1963). Although the species does not breed in San Diego County proper, small juvenals presumably raised nearby on Los Coronados or San

Clemente Island have been seen accompanying their parents in our area in summer. After the breeding season, most Xantus' Murrelets leave San Diego County waters, and from July through October are usually out-numbered by Craveri's Murrelets. The 20 "Xantus'" reported near San Clemente Island on 1 September 1958 (AFN 13:66, 1959), the ten off San Diego on 30 July 1966 (AFN 20:600, 1966), and the 30 off San Diego on 9 September 1972 (AB 27:122, 1973) were not critically distinguished from Craveri's.

Subspecies: Both of the easily distinguishable races of Xantus' Murrelet occur in San Diego County. The birds found in late winter, spring, and summer are *E. h. scrippsi* Green and Arnold, which breeds on the Channel Islands and Los Coronados Islands. This form is distinguishable by the line of division between black and white on the face extending from the bill straight back through the lores and eye. In fall and early winter, however, *E. h. hypoleuca*, breeding on Guadalupe Island, may occur also. It is identified by a white area on the face extending up through the lores and curving over the top of the eye. Positive identifications of nominate *hypoleuca* in San Diego County are: two collected 69 km (43 miles) west of Point Loma on 4 December 1966 (SBCM 3887–8), one seen near San Clemente Island on 4 September 1971 (AB 26:121, 1972), and 12, four, and one seen on 11, 12, and 18 September 1976 respectively between San Diego and San Clemente Island (G. McCaskie, AB 31:223, 1977). Occurrences of *scrippsi* during fall are also well documented (two collected off Point Loma on 2 September 1928, SD 12170–1; three collected off Point Loma on 20 November 1921, SD 16143–5), so the races must be identified carefully. Jehl and Bond (1975) provided a good analysis of the characteristics and variations of the three forms of *Endomychura* murrelets.

CRAVERI'S MURRELET

Endomychura craveri (Salvadori)

Usually an uncommon late summer and fall visitor, but irregular; rare in some years, fairly common in a few. Craveri's Murrelet is a highly pelagic bird; like Xantus', it is rare within sight of shore. One in the surf at Border Field State Park on 11 August 1981 (R. Webster) is the only one identified from land. Often only one or two are seen in a day's trip from San Diego to San Clemente Island. The largest numbers noted in this area in a single day are 30 on 9 September 1972, 15 on 11 September 1976, and 15 on 10 September 1977 (G. McCaskie). Present data suggest Craveri's Murrelets are most numerous from mid-August through mid-September, but more work needs to be done earlier and later in the season to determine if this represents the true peak. Extreme dates are 11 July (1972, two off San Diego, AB 26:906, 1972) and 13 October (1971, two 19 km [12 miles] west of San Diego, Jehl 1973).

The recent apparent increase in the frequency of reports of Craveri's Murrelet is due only to an increased understanding of its diagnostic characteristics (see Jehl and Bond

1975). Observers did not consider field identification of the species prior to the collection of a bird 48 km (30 miles) west of Point Loma on 4 September 1966 (SBCM 3854). Ornithologists early in this century confused even specimens in hand, and sometimes considered Craveri's a variation of *Xantus* Murrelet. The three local specimens in SD (16 km [10 miles] west of Point Loma on 28 August 1925, SD 9938-9; off Point Loma on 28 August 1928, SD 12164) have not been reported previously in print.

ANCIENT MURRELET

Synthliboramphus antiquus (Gmelin)

Very rare fall and winter visitor. Ancient Murrelets prefer ocean waters close to shore; most county records are of birds seen within 3 km (2 miles) of land or carcasses washed up on beaches. The species has not been noted in San Diego County farther than 16 km (10 miles) offshore. It has been found just inside the entrance to both Mission (six on 10 December 1979) and San Diego bays (two on 15 December 1979) and inside the Oceanside harbor (one on 22 December 1979, D. Povey). Except for small invasions in the winters 1940-1941 and 1979-1980, Ancient Murrelets have been reported sporadically, though almost annually since 1974. Usually only one or two individuals are seen at once, but Sefton (1927b) collected three "at sea a short distance from Point Loma" on 11 November 1926. In 1941, Kenyon (1942) collected two from a flock of eight "less than a half mile from shore at La Jolla" on 2 January, and mentioned that "another small flock of six birds was seen later, farther out." In 1979, besides the observations cited above, five near the Imperial Beach pier on 15 December are noteworthy (AB 34: 307, 1980).

Most San Diego County Ancient Murrelets have been recorded from 22 October (1979, one in the entrance to Mission Bay, D. Povey) to 5 April (1920, La Jolla, SD 2163). Exceptionally early were one collected off Point Loma on 26 August 1928 (SD 12163) and another seen about 1.5 km off Ocean Beach on 8 September 1979 (AB 34:201, 1980); the oiled bird picked up dead at Pacific Beach on 25 April 1904 (Bishop 1905) was late.

CASSIN'S AUKLET

Ptychoramphus aleuticus (Pallas)

Fairly common to common year-round visitor to pelagic waters, generally keeping more than 8 km (5 miles) offshore. Cassin's Auklets are uncommon to rare closer to the coast, and are rarely seen from shore (one at Sunset Cliffs on 4 January 1959, AFN 13: 323, 1959; two at La Jolla on 10 February 1978, J. Dunn). Typically, 10 to 15 may be seen during a day's trip from San Diego to San Clemente Island, occasionally 35 (10 September 1977) or 40 (19 May 1973). Forty were estimated between San Diego and Los Coronados Islands on 22 November 1969 (G. McCaskie) and an exceptional 250 were observed between San Diego and

San Clemente Island on 21 November 1970 (AB 25:109, 1971). No regular seasonal variation in the abundance of Cassin's Auklet has been reported, but it may be significant that two of the highest numbers reported were in November.

PARAKEET AUKLET

Cyclorhynchus psittacula (Pallas)

Accidental. Kenyon (1937) found three birds dead "on the beach north of La Jolla" on 28 January 1937. Two of these were "badly mutilated," but he preserved the third and later donated it to the United States National Museum, where it is now number 529104.

RHINOCEROS AUKLET

Cerorhinca monocerata (Pallas)

Uncommon to fairly common winter visitor, rare summer straggler. The Rhinoceros Auklet is a pelagic bird which is most numerous within 16 km (10 miles) of the coast, but may be seen in small numbers farther offshore as well. The birds are rarely seen from shore (one at La Jolla on 14 January 1942, Kenyon 1942; two at Imperial Beach on 3 March 1976, G. McCaskie), where they are most likely to be observed during strong westerly winds. Rhinoceros Auklets are frequently washed up dead on beaches.

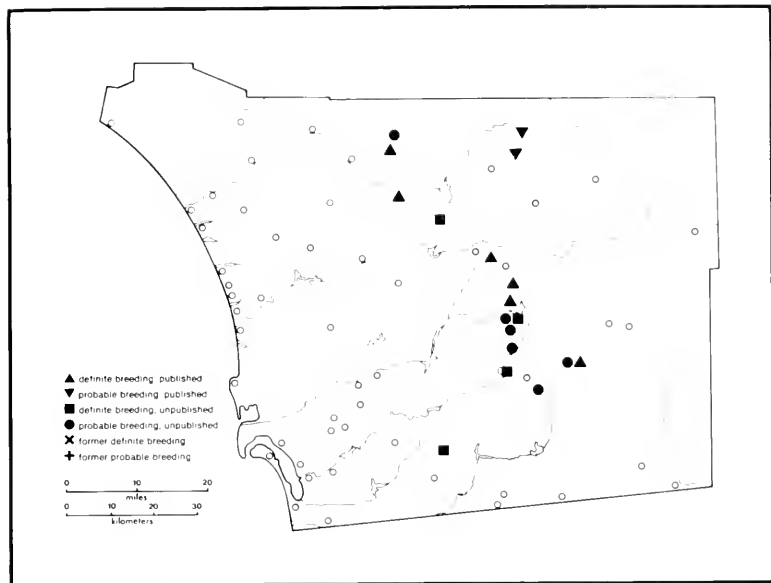
Seldom may more than 20 individuals be seen in a day; numbers as high as 18 within 8 km (5 miles) of Mission Beach on 7 February 1978 (D. Povey) and 30 between San Diego and San Clemente Island on 27 February 1971 (G. McCaskie) are unusual. Unique is the record of 350 between San Diego and Los Coronados Islands on 22 January 1972 (AB 26:635, 1972).

Rhinoceros Auklets occur in greatest numbers from late November to late April. The timing of migration is difficult to determine because a few birds linger through the summer in some years. The species has been noted in San Diego County in every month of the year except October, but it is not known if the three individuals recorded in September (8 km [5 miles] west of Point Loma on 7 September 1925, SD 9973; off San Diego on 3 September 1967 and on 15 September 1973, G. McCaskie) were early fall migrants or leftover summer stragglers. In spring, Rhinoceros Auklets are found in decreasing frequency through May. Summer records usually are of single individuals, but three were seen off San Diego on 30 July 1966 (AFN 20:600, 1966).

HORNED PUFFIN

Fratercula corniculata (Naumann)

Casual visitor in winter and spring, five records. One found dead on the beach 5 km (3 miles) north of La Jolla on 25 February 1933 was preserved as a mummified specimen (Huey 1933; SD 16183). One was seen 31 km (19 miles) southeast of San Clemente Island on 1 June 1971 (AB

MAP 23. Breeding Distribution of Band-tailed Pigeon (*Columba fasciata*)

25:801, 1971). One bird long dead was found on the beach near La Jolla on 28 September 1974 (SD 38925; date misreported in AB 29:122, 1975, as 28 August). Seven were seen and one was photographed within 16 km (10 miles) east and south of the south end of San Clemente Island on 10 May 1975 (AB 29:909, 1975); unprecedented large numbers of Horned Puffins were observed throughout the offshore waters of Southern California in May 1975. One was photographed dead on the beach at Del Mar on 12 May 1976 (AB 30:891, 1976). Hoffman et al. (1975) provide a comprehensive review of the species' distribution. Since about 1953 the Horned Puffin's status on the United States west coast has changed from casual winter visitor to rare visitor in late spring and early summer.

TUFTED PUFFIN

Lunda cirrhata (Pallas)

Casual visitor in spring, accidental in fall. Three records in our area: one collected at Cortez Bank, 153 km (95 miles) west of Point Loma on 27 April 1968 (AFN 22:576, 1968, SBCM 4128); one seen near San Clemente Island on 1 June 1971 (AB 25:801, 1971); and one picked up dead at Ocean Beach (specimen label says Mission Bay) on 11 September 1972 (AB 27:122, 1973; SD 38221). Significant also is one seen 80 km (50 miles) southwest of San Clemente Island on 27 April 1967 (AFN 21:541, 1967).

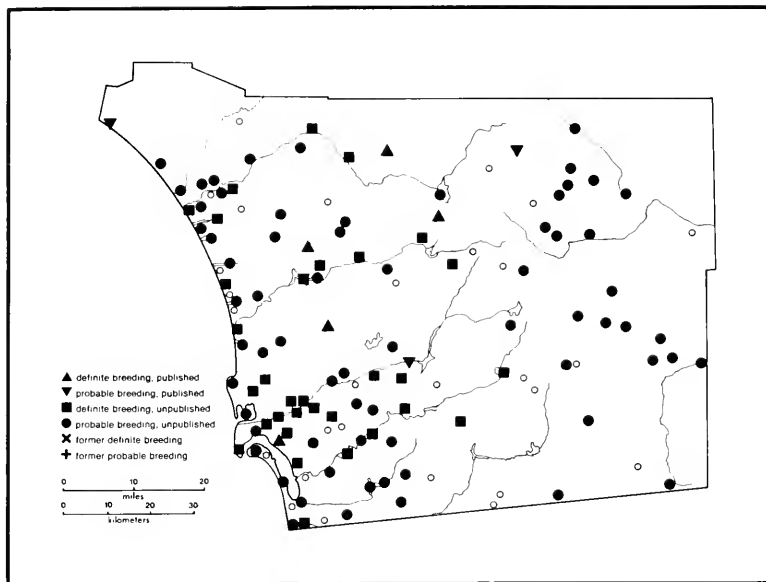
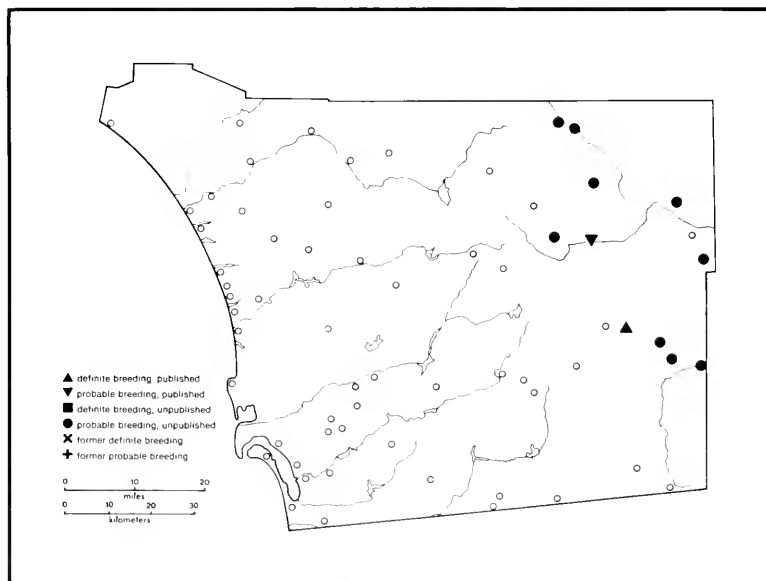
Pigeons and Doves

Family Columbidae

BAND-TAILED PIGEON

Columba fasciata monilis Vigors

Resident in the sense that the species is present throughout the year, but subject to irregular movements or migrations which are still obscurely understood. Band-tailed Pigeons are usually fairly common to common in their main range, but sometimes, most frequently in fall and winter, very common to abundant. They are resident in mixed coniferous-oak woodland, and use dense live oak woodland extensively for foraging, if not also for nesting. The Palomar, Cuyamaca, and Laguna mountains form most of the species' breeding range. Nesting has been recorded also at Pine Mountain (Sharp 1903), Mesa Grande, and Lyons Peak (WF). Band-tailed Pigeons probably breed throughout the coastal slopes above about 1070 m (3500 feet) elevation, with Descanso, elevation 1040 m (3400 feet), being the lowest documented nesting locality (WF). Gilman (1903) reported "several pairs" in Lost Valley on 12 June (year?), and Unitt (1981) found the species to be fairly common on Hot Springs Mountain in the summer of 1980. Within the breeding range, 10–25 Band-tailed Pigeons may usually be seen in a day, but on occasion, flocks of much larger size occur with up to 300 at Palomar Mountain on 14 November

MAP 24. Breeding Distribution of Mourning Dove (*Zenaida macroura*)MAP 25. Breeding Distribution of White-winged Dove (*Zenaida asiatica*)

1939 (E. Beemer) and 300 along Agua Dulce Creek, Laguna Mountains, on 21 January 1978 (P. Unitt). The largest numbers noted are in fall and winter, but substantial numbers may be seen at other times of the year as well (over 100 at Palomar Mountain on 2 July 1978, E. Beemer).

The breeding season of Band-tailed Pigeon is very protracted; possibly food abundance, rather than the time of year, triggers the start of nesting activity. Egg dates (7), 17 March – 11 October; Stephens (1913) reported an egg near hatching in the Laguna Mountains on 6 March 1877.

In most of the inland valleys of the coastal lowland, Band-tailed Pigeon is a rare visitor in winter and early spring. In the past, flocks were occasionally noted in the lowland valleys in winter; Belding (1890) reported a flock in El Cajon on 15 December 1883. Sharp (1903) considered the species a "pretty regular winter visitor to foothills...frequently coming down to the Escondido Valley in bands of 15 or 20 when driven out by the snows above." In Pauma Valley, Eleanor Beemer has observed occasional large flocks throughout the year, such as 60–80 on 29 July 1937 and 50 on 17 January 1944. Her observations of the birds feeding in grain fields, on live oak acorns, in hay stubble, and on elderberries suggest that birds move altitudinally from breeding areas on nearby Palomar Mountain to feeding areas in Pauma Valley. Huey's (1913) report of "many seen rapidly descending from the mountain [Palomar] to feed on wheat in valley below" on 9 June 1912 also indicates this.

Along the coastline the Band-tailed Pigeon is also a rare visitor, but its seasonal pattern of occurrence seems completely different than in the valleys just a few miles farther inland. Coastal records are mostly for late spring and fall, with a scattering through the summer. Dates extend from 5 April (1974, AB 28:852, 1974) to 14 October (1971, one on Otay Mesa, AB 26:121, 1972). I find only one winter record: one in San Diego on 3 January 1960 (AFN 14: 343, 1960). Band-tailed Pigeons normally visit the coast in very small numbers, but about 25 reached Point Loma during May 1981 (G. McCaskie).

The species is casual in the Anza-Borrego Desert, with three reports in the ABDSP file: two at Lower Willows in Coyote Creek Canyon on 6 June 1974, one at Bow Willow Ranger Station on 28 August 1975, and one at Horse Camp, Coyote Creek Canyon in May 1981.

MOURNING DOVE

Zenaida macroura marginella (Woodhouse)

The Mourning Dove is a very common to abundant resident, occurring throughout the county. Its habitat preferences are very generalized: for foraging, bare or grassy ground; for nesting, any large shrub or tree capable of supporting its flimsy nest. Agricultural areas, residential neighborhoods, parks, and woodland edges are the habitats in which Mourning Dove is most abundant. The largest numbers are seen where the birds concentrate to feed, such as 750 in the San Luis Rey River Valley in Oceanside on

31 December 1977 and 500 on Fiesta Island in Mission Bay on 31 March 1978 (P. Unitt). The species is least numerous inside coniferous woodland, in unbroken dense chaparral, and in sparse creosote bush scrub, but even in these habitats it is still uncommon to fairly common.

Although Mourning Doves are found in San Diego County throughout the year, they are definitely not sedentary. A few may be seen out of sight of land on almost every pelagic trip off San Diego in May and September, indicating highly migratory habits. Birds banded at San Diego on 3 January 1929 and 11 March 1929 were recovered at Boise, Idaho on 7 September 1929 and at Reno, Nevada on 10 September 1929 respectively (Lincoln 1936b). During the winter, Mourning Doves are absent from the mountain zone, and are uncommon in the foothills except at the most favorable localities, such as Lake Henshaw. Little is known of the timing of their migration; regarding California as a whole, Grinnell and Miller (1944) state "exodus migration occurs in October, and return migration takes place in April and May." In San Diego County mountains, Mourning Doves return by late April.

Mourning Doves have a long breeding season. Egg dates (60), 2 April – 7 August. Sharp (1907a) found eggs at Escondido from 15 March to 2 September. Gander (1927) reported "well-feathered young" as early as 22 February in 1927, and a nest with a hatching egg on 4 September 1926. Howell (1912) collected eggs near Covina, Los Angeles County, on 5 December 1911. Probably a few individuals breed all through the fall and winter.

WHITE-WINGED DOVE

Zenaida asiatica mearnsi (Ridgway)

Uncommon and localized resident in the Anza-Borrego Desert. Rare fall migrant, very rare winter visitor, and spring migrant in the coastal lowland. In the Anza-Borrego Desert, White-winged Doves occur near springs in mesquite thickets or riparian vegetation. Only two to four individuals are usually found at a time at each locality; 20 in Coyote Creek Canyon on 6 May 1978 (S. Goldwasser) and 15 at Agua Caliente Springs on 5 November 1978 (G. McCaskie) are the largest numbers reported. In sharp contrast to its highly migratory habits in the rest of its southwestern United States range, White-winged Dove exhibits no well-marked seasonal variation in abundance in eastern San Diego County. Practically nothing is known of the breeding of White-winged Dove in the Anza-Borrego Desert. Sams and Stott (1959) state "reported by Mrs. Heraty as breeding at Agua Caliente Springs"; Alice Fries saw a nest there on 4 March 1975.

Near the coast, the species is most often reported from agricultural areas and parks. Even during its peak period, usually only solitary individuals are noted. The maximum is three together, as at Border Field State Park on 27 August 1978 (G. McCaskie). Most coastal White-winged Doves occur between mid-August and early October, with a peak in mid and late September and an earliest date of

30 July (1978, one at Miramar, AB 32:1209, 1978). Reports decrease in frequency through November and December, and the species has been noted only seven times in January and February. One in Casa de Oro 1.6 km (1 mile) east of Spring Valley on 3 March 1965 (SD 35081) and one in the Tijuana River Valley on 12 March 1966 (AFN 20:460, 1966) are the only records as late as March. Late spring vagrants have been found on 11 occasions between 3 May (1981, one at San Elijo Lagoon, SEL surv.) and 6 June (1966, one in the Tijuana River Valley, AFN 20:600, 1966).

COMMON GROUND DOVE

Columbina passerina pallescens (Baird)

Uncommon and localized resident. Ground Doves are found in agricultural areas at a few scattered localities in the coastal lowland and in the vicinity of Borrego Springs. Nesting has been reported at Pauma Valley (nests on 1 May 1965 and 19 April 1971, E. Beemer), Valley Center (nest with young on 17 August 1974, AB 28:949, 1974), and the Tijuana River Valley (seven nests between 25 May and 2 October 1958, Morley 1959a, Sams 1959; pair building nest 9–10 February 1963, G. McCaskie; two young fledged, mid-October 1965, AFN 20:92, 1966). Ground Doves are also seen regularly, and probably breed, in Fallbrook on Green Canyon Road (A. Fries), and in the San Luis Rey River Valley near Guajome Lake (P. Unitt). Seldom are more than six individuals seen in a day except in the Tijuana River Valley; exceptionally high numbers are 15 in Pauma Valley 18–19 February 1969 (E. Beemer), 12 near Guajome Lake on 1 January 1979 (J. Dunn), and 38 in the Tijuana River Valley on 23 December 1967 (AFN 22: 394, 1968). There are one or two reports each from San Luis Rey (A. M. Rea), Vista (A. Fries), Lakeside and Santee (SD), Kearney Mesa (C. Edwards), Mission Valley (Grey 1916), Sweetwater Reservoir (D. Parker), and Otay (G. McCaskie). A Ground Dove has been seen once in the foothill zone: Mesa Grande, 12 November 1977 (C. Edwards). A small population is resident in the Borrego Valley area: a specimen in fall 1968 (SD 36983); two on 13 March 1977 (G. McCaskie); up to four from 1 to 9 April 1978 (P. Unitt), two in Coyote Creek Canyon on 6 May 1978 (S. Goldwasser); nest at Anza-Borrego Desert State Park Headquarters in April 1972 (ABDSP file).

The Common Ground Dove has probably established itself as a resident both on the coast and in the Anza-Borrego Desert in historic times, presumably as a result of the development of agriculture. The first record was of a specimen shot "about 1900" at San Pasqual (Willett 1912); breeding was first noticed in 1958 (Sams 1959, Morley 1959a). In Pauma Valley, where Eleanor Beemer has recorded birds since the mid-1930s, she first noted Ground Doves in 1962.

Cuckoos

Family Cuculidae

YELLOW-BILLED CUCKOO

Coccyzus americanus occidentalis Ridgway

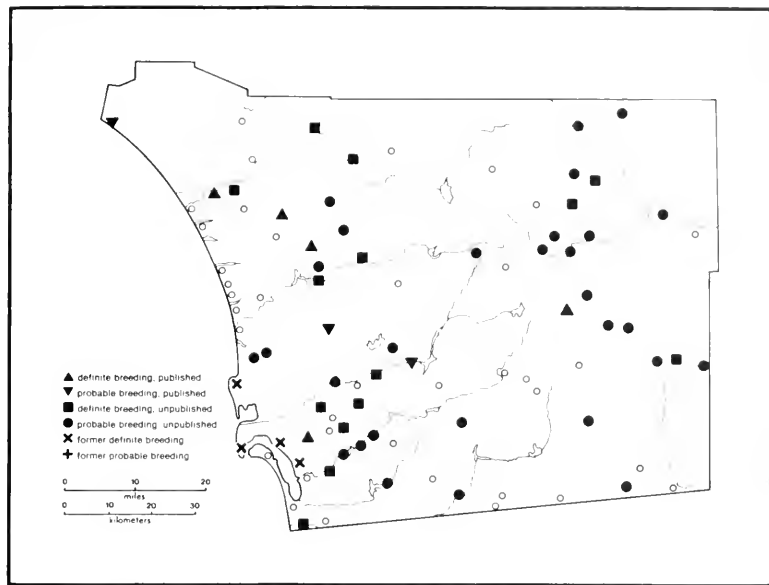
Formerly a rare summer resident, now extirpated. Breeding Yellow-billed Cuckoos were restricted to dense lowland riparian woodland. Nesting was recorded definitely at two localities: Escondido and Bonita. At Escondido, a female with a brood patch was collected on 30 June 1915, and "several weeks later immature cuckoos were seen and heard calling in the willows" (Dixon 1916). Dixon also collected a set of two eggs at Escondido on 2 July 1932 (Willett 1933). May Canfield found a nest with two eggs "on Sweetwater River...about 1 July 1915" (Willett 1933); the specimen she collected on 3 July 1915 (SD 31381) indicates the locality was Bonita. Other potential nesting localities from which Yellow-billed Cuckoos were reported are: Pauma Valley (seen on 8 June 1946 and 4 May 1948), San Luis Rey River near Bonsall (seen on 3 August 1950, E. Beemer), Sorrento Valley (no dates, Sams and Stott 1959), and Tijuana River Valley (one seen on 20 July 1931, von Bloeker 1931). The old reports from Poway ("once seen in 1875 and once in 1876," F. E. Blaisdell in Belding 1890) could have been of migrants instead of local breeding birds. A bird collected "among sumac bushes" on 20 August 1896 and another seen on 22 August 1896, both near Escondido (Hatch 1896), were certainly migrants.

Since 1950, the Yellow-billed Cuckoo has been reported only twice, and neither time from suitable nesting habitat. One was seen at "Oceanside" (= Batiquitos Lagoon) on 23 August 1969 (AFN 24:100a, 1970). Three or four were seen by Cora Wilson near Vista 11–12 August 1978 (AB 32: 1209, 1978). The latter locality is slightly less than a mile south of the San Luis Rey River, and the number of birds suggests a family group. Possibly this indicates the persistence of a very few breeding pairs in the remnant riparian woodlands of northern San Diego County.

GREATER ROADRUNNER

Geococcyx californianus (Lesson)

Uncommon resident in desert scrub, coastal sage scrub, and broken chaparral. Occasionally roadrunners wander into agricultural or residential areas adjoining their preferred habitats. They occur almost throughout the coastal lowland, foothill, and desert sections of San Diego County, being absent only from areas of solid urbanization, unbroken woodland, and open grassland. The upper altitudinal limits of the Greater Roadrunner are not well known; on the coastal slope it has been recorded up to 910 m (3000 feet) at Santa Ysabel (21 March 1892, SD 415), and to about 1100 m (3600 feet) on the La Posta Truck Trail (4 June 1977). On the desert slope, the species occurs up to at least



MAP 26. Breeding Distribution of Greater Roadrunner (*Geococcyx californianus*)

790 m (2600 feet) in the San Felipe Valley (two on 2 February 1978, P. Unitt) and La Puerta (= Mason) Valley (partly downy juvenal collected on 11 July 1927, SD 3066). Egg dates (43): 4 March – 16 June; Sharp (1907) collected eggs as early as 14 February. Although roadrunners are still widespread in San Diego County, they have been substantially restricted in range and reduced in numbers in the coastal lowland by urbanization. Certainly they are no longer "common" there as Belding (1890) and Stephens (1919a) once called them.

Barn Owl occurs throughout the lowlands, and probably the foothills, on the coastal slope. Its upper altitude limits are very poorly known. Lake Henshaw (P. Unitt) and Alpine (SD) are the easternmost known localities on the coastal slope, but probably do not represent the species' actual limits. Barn Owls also occur in the Anza-Borrego Desert, where they have been noted at Borrego Springs, Borrego Palm Canyon, Tamarisk Grove, Plum Canyon (ABDSP file), and Mason Valley (SD). Egg dates (64), 12 February – 23 April, with one from 18 December. Sharp (1907) found eggs at Escondido as late as 22 May.

Barn Owls

Family *Tytonidae*

BARN OWL

Tyto alba pratincola (Bonaparte)

Uncommon but very widespread resident, occurring in agricultural and residential areas, grassland, riparian and oak woodland, and in broken chaparral near sandstone bluffs. Grinnell and Miller (1944) describe the habitat requirements of Barn Owl in terms of three factors: open grass or agricultural land for foraging, thick vegetation or buildings for daytime roosting, and natural or artificial cavities for nesting. In San Diego County, situations where nests have been noted include abandoned mine shafts, old raven nests, barns, and crevices in sandstone bluffs. The

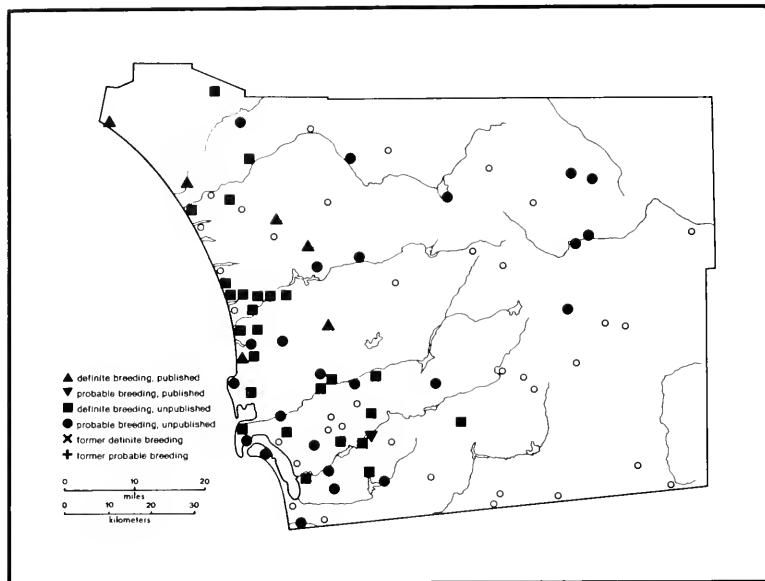
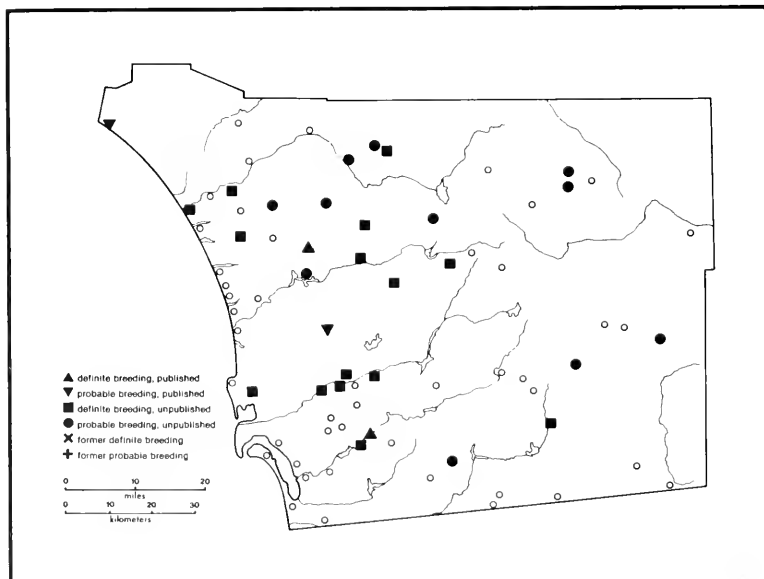
Typical Owls

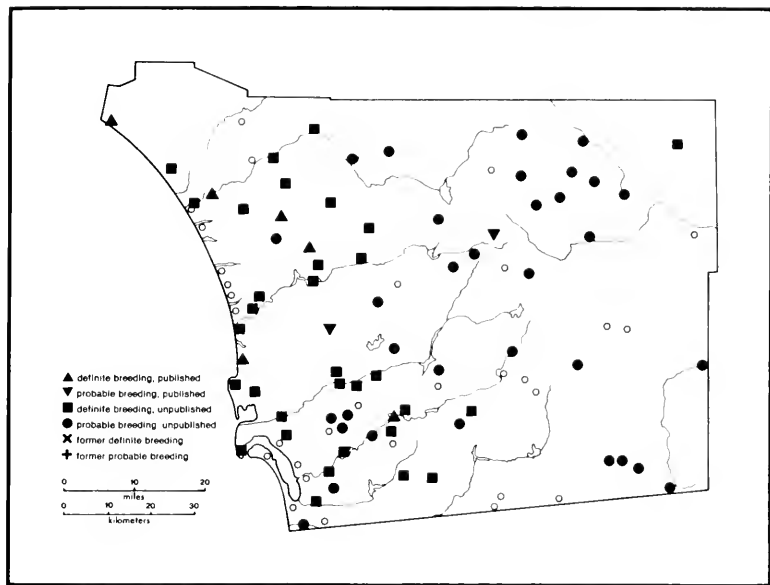
Family *Strigidae*

FLAMMULATED OWL

Otus flammeolus flammeolus (Kaup)

Casual summer visitor, with four reports from dense coniferous woodland. Three are from Palomar Mountain (two on 13 and 16 June 1971, AB 25:907, 1971; two on 29 April 1972, Winter 1974; one from 24 May to 3 June 1981, R. Higson) and one is from Cuyamaca Rancho State Park, probably Paso Picacho Campground (one on 27 April 1972, Winter 1974). Possibly the species breeds rarely, but there is no definite evidence of this. There are two records of migrants away from coniferous woods. One is of a bird cap-

MAP 27. Breeding Distribution of Barn Owl (*Tyto alba*)MAP 28. Breeding Distribution of Western Screech Owl (*Otus kennicottii*)



MAP 29. Breeding Distribution of Great Horned Owl (*Bubo virginianus*)

tured on a ship in San Diego Bay on 10 October 1962 (Banks 1964a). Unfortunately, this specimen is no longer extant. A specimen (SD 41184) from "San Diego area" bears the information "died 21 Oct. 1971" and "found locally, fallen out of tree, injured leg; brought in to S.D. Zoo by Cal. Fish and Game."

Subspecies: Marshall (1967) described significant geographic variation in the Flammulated Owls of North America, though he declined to recognize formally named subspecies. A. M. Rea examined the specimen from San Diego and found it to match Marshall's description of birds from the Pacific Northwest, with fine markings and long wings (135–136 mm, corresponding well with Marshall's maximum of 137 mm for the large northwestern population). No specimens from that area were available for direct comparison, however.

WESTERN SCREECH OWL

Otus (asio) kennicottii cardonensis Huey

Uncommon to fairly common resident in all woodland habitats: riparian, oak, and coniferous. Screech Owls are found through most of coastal slope, from localities near the coast such as Oceanside and Rose Canyon (WF), up to over 1520 m (5000 feet) at Palomar Mountain (SD) and Mount Laguna (G. McCaskie). There are three observations in the Anza-Borrego Desert: five in Hellhole Canyon on 9 June 1973, one at the State Park Headquarters in mid-

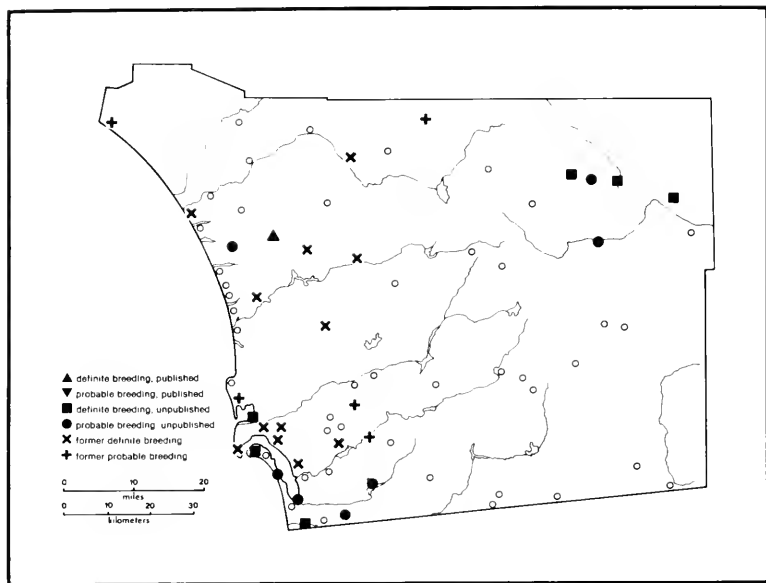
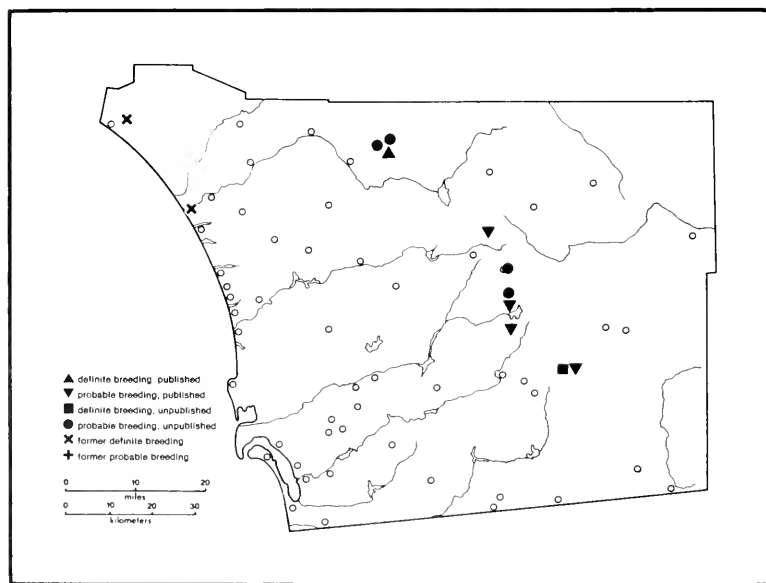
August 1976 (ABDSP file), and one heard calling at Palm Spring on 2 April 1978 (P. Unitt). Egg dates (23), 11 March – 17 May; Sharp (1907) reported 31 May. A juvenile (SD 30217) collected at Palomar Mountain on 4 July 1960 still had some down. The range of the Screech Owl in San Diego County has probably been reduced somewhat by urbanization; the species has not been reported from within the San Diego Christmas Bird Count circle since 1970.

Subspecies: Marshall (1967) studied geographic variation in screech owls. He concluded that *O. (a.) k. quercinus* Grinnell, the name formerly used for the coastal southern California population, is a synonym of *O. (a.) k. bendirci* (Brewster) of northern California, but that specimens from San Diego County more closely resemble the blackish-backed race *O. (a.) k. cardonensis* Huey of Baja California. Birds in the Anza-Borrego Desert might be the paler, more lightly marked *O. (a.) k. yumanensis* Miller and Miller, but no specimens have been collected in this area. Marshall (in Phillips et al. 1964) considered the Western and Eastern Screech Owls probably conspecific, based on observations of one mixed pair, but recently has taken the opposite view (in Monson and Phillips 1981).

GREAT HORNED OWL

Bubo virginianus (Gmelin) subsp.

Uncommon resident, occurring in many habitats: coniferous, oak, or riparian woodland, groves of sycamores or

MAP 30. Breeding Distribution of Burrowing Owl (*Athene cunicularia*)MAP 31. Breeding Distribution of Spotted Owl (*Strix occidentalis*)

eucalyptus, parks, residential, and agricultural areas. Great Horned Owls may be found wherever there are tall trees or buildings with cavities for nesting and daytime roosting. Their range includes the entire coastal slope, extending from coastal localities such as Oceanside (WF) and Point Loma (SD) up to over 1520 m (5000 feet) at Palomar Mountain (G. McCaskie) and Campbell Ranch, Laguna Mountains (SD). In eastern San Diego County, Great Horned Owls have been found in the desert-edge zone at Montezuma Valley (SD), Banner, and Jacumba (P. Unitt). They occur at several localities in the Anza-Borrego Desert, including Palo Verde Canyon, where M. Jorgensen noted three fledglings on 8 June 1973 (ABDSP file). Egg dates (67), 28 January – 13 April. On 6 January 1963, in Gopher Canyon near Bonsall, A. M. Rea collected a female with a fully developed egg in her lower oviduct (AMR 5515). Great Horned Owls prefer to use old nests of Red-tailed Hawks.

Subspecies: San Diego County evidently lies in the zone of intergradation between *B. v. pacificus* Cassin and *B. v. pallescens* Stone. A few specimens are the dark, heavily marked *pacificus* (Balboa Park, 30 March 1964, SD 35311; Live Oak Springs, 18 April 1974, SD 38707), while others are as pale and lightly barred as any *pallescens* (Spring Valley, 14 April 1931, SD 14514; San Diego, 4 August 1971, SD 37877). Most are intermediate between the two. There is great variation, but it seems to be purely individual, unrelated to locality or season. Two specimens of nominate *B. v. virginianus* (Gmelin) collected in Balboa Park on 12 and 21 October 1928 (SD 12034 and 12035) probably had escaped from the San Diego Zoo.

NORTHERN PYGMY OWL

Glaucidium gnoma Wagler

Very rare resident. The few records of Pygmy Owl in San Diego County indicate that it occurs in montane coniferous woodland. There are four reports from Palomar Mountain State Park (one on 29 April 1972, G. McCaskie; one on 25 April 1976 and 27 June 1976, J. Dunn; and one on 24 January 1981, AB 36: 336, 1981), two from Cuyamaca Rancho State Park (one on 21 September 1958, AFN 13:64, 1959; one on 9 July 1967, G. McCaskie), and two from the Laguna Mountains (nest with four young at 1520 m [5000 feet] elevation on 20 May 1920, C. L. Field in Willett 1933; one on 18 July 1959, AFN 13:456, 1959). There is one old report of Pygmy Owls breeding in oaks in the coastal lowland, a pair with "very badly incubated eggs" in 1895 and nestlings in 1896 (no exact dates) by J. M. Hatch (Sharp 1907). The birds reported as Pygmy Owls at San Diego (one in late September 1958, AFN 13:64, 1959) and at Vallecito (one on 25 July and 1 August 1959, AFN 13:459, 1959) were probably misidentified.

Subspecies: No specimens, but probably *G. g. californicum* Selater, which occurs at least in the San Bernardino and San Gabriel Mountains and in the Sierra Nevada.

BURROWING OWL

Athene cunicularia hypugaea (Bonaparte)

Uncommon and declining resident in grassland, agricultural land, and coastal dunes. Rodent burrows, usually those of California ground squirrels, are a habitat requirement. The range of the Burrowing Owl includes the entire coastal lowland of San Diego County, but urbanization has greatly restricted the extent of suitable habitat. Some localities inhabited in the late 1970s are San Marcos, near Palomar Airport in Carlsbad, Mission Bay, Lower Otay Lake, and the Tijuana River Valley. A specimen collected at Oak Grove on 11 April 1892 (SD 403) suggests the species occurs locally in the foothill zone as well. Burrowing Owls nest in the Borrego Valley and probably in the Borrego Badlands (attending burrow at Military Wash in spring 1980, M. Jorgensen). Usually only a single pair is seen at a time at a locality; a maximum is five at North Island Naval Air Station on 5 May 1978 (P. Unitt). Egg dates (41), 5 April – 8 June. Sharp (1907) found eggs at Escondido from 23 March to 16 June. Two specimens (SD 31417–8) taken at La Presa on 28 August still have some down. Although Burrowing Owls are present in constant numbers throughout the year, the species is evidently not sedentary. Individuals have been noted on several occasions flying far out at sea, such as one 97 km (60 miles) south of San Clemente Island on 20 October 1964 (AFN 19:79, 1965).

SPOTTED OWL

Strix occidentalis occidentalis (Xantus)

Rare and localized resident in dense coniferous woodland on steep shady slopes. Most reports, both historical and recent, are from Palomar Mountain; recent localities in this area are Doane Pond and Fry Creek Campground. Other recorded localities are Volcan Mountain (21 September 1924, SD 31425, Willett 1933), 0.8 km (0.5 mile) down Banner Grade from Julian (31 August 1974, SD 38979), "San Diego River" (exact locality not specified, 30 April 1974, Gould 1977), Harrison Park, Cuyamaca Mountains (19 October 1945, SD 19201), North Peak (30 April 1974, Gould 1977), Cuyamaca Rancho State Park (28 November 1946, SD 31421; three on 21 September 1958, AFN 13:64, 1959; one on 10 August 1968, G. McCaskie; two on 30 April 1974, Gould 1977), Mount Laguna (two on 10 November 1968, G. McCaskie; one on 28 May 1975, Gould 1977), and Agua Dulce Creek, Laguna Mountains (one from 30 May to 13 July 1974, accompanied by two juvenals on the latter date, G. McCaskie).

The Spotted Owl has been reported from four localities in the coastal lowland. A. M. Ingersoll collected a set of two eggs from a cliff ledge near Oceanside on 24 March 1894 (Willett 1912, WF 21133), and another set (WF 69985) was collected from a hole in a sycamore in [San] Onofre Canyon on 20 March 1908. Eleanor Beemer has noted the species a few times at Puma Valley: 26 August 1946, early February 1954 (AFN 8:270, 1954). No evidence

indicates that Spotted Owls still breed outside the mountain zone in San Diego County, though they inhabit dense live oak woodland at some places elsewhere in California. Gould (1977) reported an individual seen at the San Diego Sports Arena on 19 November 1973, but this seems so unlikely that without further substantiation I suggest the report be disregarded.

LONG-EARED OWL

Asio otus wilsonianus (Lesson)

Rare and localized resident and winter visitor. Long-eared Owls are now known to be resident only in the Anza-Borrego Desert. One or two pairs nest annually at Tamarisk Grove campground. Large numbers gather there and at nearby Yaqui Well to roost during the winter, such as 10 on 29 January 1977 (G. McCaskie). Communal roosts have also been found in mesquite thickets at Clark Dry Lake (four in December 1974, 12 on 3 December 1976) and along Vallecito Creek near Campbell Grade (P. Jorgensen). These localities should be investigated in spring for nesting Long-eared Owls. The ABDSP file contains four reports from other desert localities from August to February.

By the late 1970s, the Long-eared Owl was only a rare winter visitor on the coastal slope. A roost has been noted annually since 1977 on Rancho Otay, where a maximum of 12 was counted on 15 December 1979 (B. Cord). Elsewhere, recent observations include one at Palomar Mountain from 31 December 1980 to 8 January 1981 (AB 35:336, 1981), one at Pauma Valley on 25 March 1973 (A. Fries), one at Point Loma on 10 October 1976 (G. McCaskie), and four in the Tijuana River Valley on 4 January 1978 (D. Povey). A remarkable record, indicating the species' highly migratory or dispersive habits, is of a bird banded at Escondido on 22 April 1934 recovered at Corbeil, Ontario, Canada, on 9 October of the same year (Lincoln 1936a).

Formerly, the Long-eared Owl was a fairly common resident in the coastal lowland. The birds were most numerous in riparian woodland, but also nested in live oak woodland. Cooper (1870) reported them as common near San Diego in the early 1860s, and Sharp (1907) considered them common residents in the Escondido area until 1905. Egg dates (66), 7 February – 4 May; Sharp reported 10 May. The most recent known breeding of Long-eared Owl on the coastal slope was of a pair with downy young in the nest near Oceanside on 13 May 1973 (P. Unitt). A juvenile with some natal down still adhering to it was collected at Poway on 9 June 1972 (SD 38177).

Subspecies: K. C. Parkes (pers. comm. to A. M. Rea) examined geographic variation in Long-eared Owls. He doubted the validity of a western race, *A. o. "tuftsi"* Godfrey distinguishable from eastern *A. o. wilsonianus* (Lesson) and suggested the supposed differences were artifacts of individual variation and museum age of specimens. This is hardly surprising if the birds are dispersing across the continent as the band recovery from Ontario indicates.

SHORT-EARED OWL

Asio flammeus flammeus (Pontoppidan)

Rare to uncommon and localized winter visitor to salt marshes, open grassland, and agricultural areas. Short-eared Owls are usually found along and near the coast, having been reported no farther inland than Guajome Lake (one on 2 April 1967 and 27 December 1969, A. Fries) and Telegraph Canyon 1.6 km (1 mile) east of junction with Otay Lakes Road (one on 21 November 1981, D. Povey). The largest numbers have been reported from Fiesta Island in Mission Bay (six on 30 January 1976, J. Dunn), the south San Diego Bay saltworks (seven on 18 December 1976, M. Evans), and the Tijuana River estuary (15 on 12 February 1964, G. McCaskie). Recorded dates for Short-eared Owl extend from 30 September (1980, one at Point Loma, AB 35:226, 1981) to 11 April (1975, one in the Santa Margarita River Valley at Basilone Road, A. Fries). Exceptional was one seen at the Santa Margarita River mouth on 23 May and 12 June 1972 (A. Fries).

There is one old breeding record of Short-eared Owl in San Diego County. Willett (1933) reported that E. E. Sechrist collected two sets of eggs at "National City Marsh" on 10 April 1906. I have not traced these egg sets; they are not in WF. Willett also mentions that J. B. Dixon saw Short-eared Owls at San Diego Bay and at "Santa Margarita" (presumably the river mouth) during the summer. Possibly the species was formerly a rare breeding resident.

SAW-WHET OWL

Aegolius acadicus acadicus (Gmelin)

Rare resident in montane coniferous woodland. Most reports are from Palomar Mountain, such as four on 5 May 1957 (AFN 11: 376, 1957), and two on 19 May 1975 (AB 29:1032, 1975). There are also two records from the Cuyamaca Mountains: one collected at Pine Hills on 17 December 1945 (MVZ 94414, the only county specimen) and young seen in Cuyamaca Rancho State Park on 4 July 1939 (Grinnell and Miller 1944). The latter is the only evidence of Saw-whet Owls breeding in San Diego County.

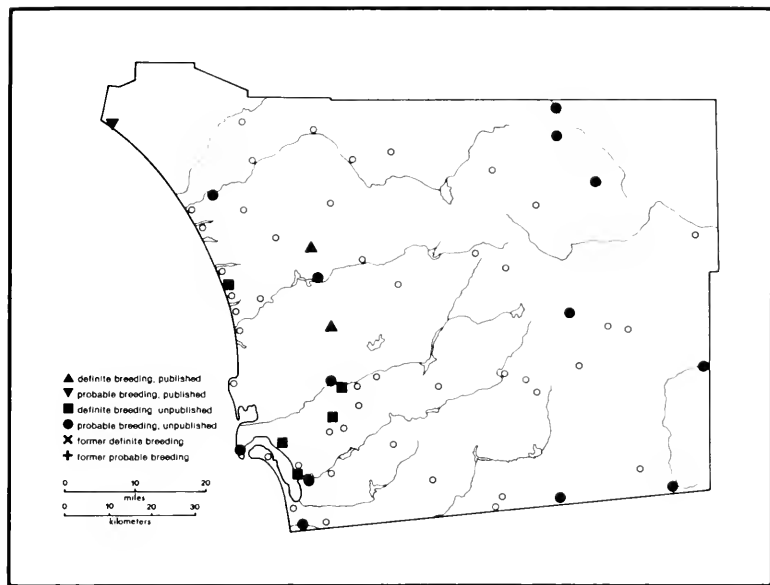
Nightjars

Family Caprimulgidae

LESSER NIGHTHAWK

Chordeiles acutipennis texensis Lawrence

Uncommon to fairly common summer resident and migrant, casual in winter. Lesser Nighthawks occur in habitats that include open, bare ground surface; desert scrub, broken chaparral (as on mesa tops), and agricultural areas. On the coastal slope, the species has been recorded at many localities in the lowland, and at Campo in the foothill zone (12 June 1877, SD 432). It probably breeds throughout the Anza-Borrego Desert and in the desert-edge zone (one at Jacumba on 26 June 1978, P. Unitt). Large numbers of



MAP 32. Breeding Distribution of Lesser Nighthawk (*Chordeiles acutipennis*)

Lesser Nighthawks noted in the Tijuana River Valley in fall (up to 40 on 20 September 1977, J. Dunn) may be concentrations of migrants rather than of local breeding birds. Little information is available on the schedule of Lesser Nighthawk migration. Most spring migrants probably arrive in late March and April: 15 March (1974, Mission San Diego de Alcalá, SD 38708) is the earliest spring record. The species decreases in abundance in October, and is only rarely reported in November. Single individuals have been noted eight times in the San Diego area in December and January: 20 January (1979, one at Sweetwater Reservoir, AB 33: 314, 1979) is the latest winter date. Egg dates (15), 23 April – 27 June; M. Evans found a pair incubating two eggs 5 km (3 miles) east of Del Mar on 26 June and 3 July 1972.

COMMON NIGHTHAWK

Chordeiles minor (Forster) subsp.?

Casual vagrant, three records. One was heard calling at Cabrillo National Monument, Point Loma, on 5 June 1975 (J. Dunn). Another was seen in the Tijuana River Valley on 25 September 1976 (AB: 31, 233, 1977). The third was seen and heard at Escondido on 11 July 1981 (K. Weaver).

Stephens' (1919a) mention of the species as "occasional in the eastern part of the county in the migrations" is not based on any definite records. Emerson's (1887) report of Common Nighthawk as "common" at Poway is a misidentification of Lesser Nighthawk.

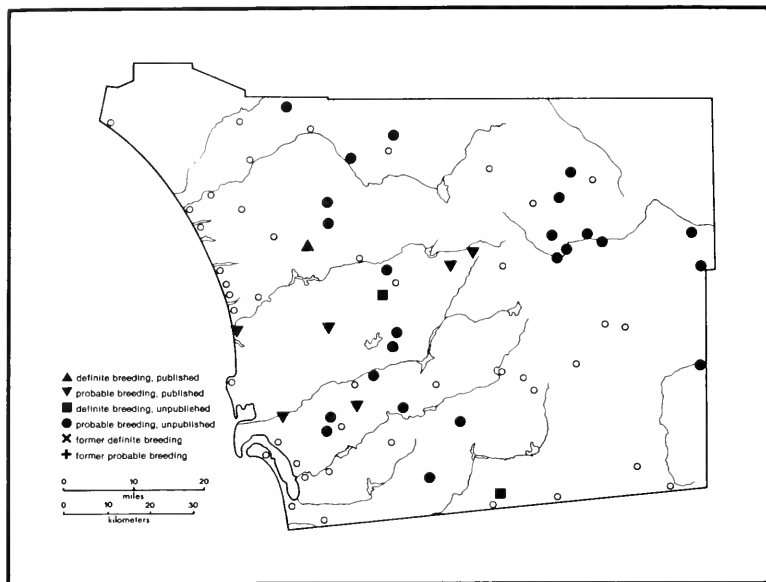
Species: Not determinable for lack of specimens; birds

reaching San Diego County could be vagrants of a number of races.

POOR-WILL

Phalaenoptilus nuttallii (Audubon) subsp.

Uncommon summer resident and migrant, status in winter not positively known. Poor-wills are usually noticed in chaparral and desert scrub habitats. They have been found throughout the county from near the coast (one calling at Del Mar in February and March 1977, AB 31: 374, 1977), up as high as Palomar Mountain (two on 8 May 1974, G. McCaskie), and east to the border of Imperial County (road kill 1.6 km [1 mile] west of county line on Highway 78 on 21 October 1977, A. Fries; one calling near Carrizo Marsh on 5 May 1978, S. Goldwasser). However, their breeding distribution and migratory habits are poorly known. Definite breeding localities are "near San Diego" (eggs collected by A. M. Ingersoll on 22 March 1895, Barlow 1895). Escondido (eggs found from 18 May to 20 June, Dixon 1923). Potrero Grade (female with egg in oviduct on 28 April 1935, SD 17072), 5 km (3 miles) southwest of Ramona (female with egg in oviduct in May 1963, AMR 318), and 2.4 km (1.5 miles) south of Agua Caliente Springs (female with enlarged ovary on 15 May 1978, SD 40974). Birds seen at Point Loma (several reports, such as one on 3 October 1980, AB 35:227, 1981) and Coronado (one on 28 April 1981, E. Copper) are undoubtedly migrants. Specimens that resemble the race breeding in the Great Basin have been



MAP 33. Breeding Distribution of Poor-will (*Phalaenoptilus nuttallii*)

collected in both spring and fall, suggesting a substantial migration through San Diego County (see below). Dates of occurrence extend from 3 February (1935, Escondido, SD 23307) to 21 November (1915, Cardiff, SD 31452), except for an observation of one in the Tijuana River Valley on 26 December 1966 (G. McCaskie). Poor-wills are very inconspicuous when not calling, however, and become torpid during the winter in at least some parts of their range. Dormant or semi-dormant birds have been found in the Anza-Borrego Desert in February and March (ABDSP file).

Subspecies: The population breeding on the coastal slope is closest to the dark brown race *P. n. californicus* Ridgway, which breeds from southern Oregon south through California, west of the Sierra Nevada and deserts, to northwestern Baja California. Ridgway (1914) points out that "perfectly typical examples" of *californicus* are found only in the humid coastal strip of northern California, and implies that specimens from San Diego County show intergradation with the paler, grayer race *P. n. nuttallii*. Poor-wills closely resembling nominate *nuttallii*, which breeds east of the Cascade Range and Sierra Nevada, have been collected from 3 February (1935, cited above) to 10 April (1922, San Diego, SD 2350) in spring and from 6 October (1891, Santa Ysabel, SD 426) to 21 November (1915, cited above) in fall, indicating migration through San Diego County. However, some specimens of probable locally breeding birds, especially the one from near Agua Caliente Springs, are close to *nuttallii* as well. A. M. Rea (pers. comm.) suggests that all

true *californicus* in San Diego County are migrants from the northwest, and that the local breeding population is not typical of any race, but is possibly intermediate toward *P. n. dickeyi* Grinnell, nesting south of 30° N. in Baja California. One collected 8 km (5 miles) east of San Felipe Narrows on 21 October 1938 (SD 17937) is almost as pale and buffy as *P. n. hueyi* Dickey of the lower Colorado River Valley, but is not quite typical of that race.

WHIP-POOR-WILL

Caprimulgus vociferus Wilson subsp.?

Casual visitor, three records. One was captured and released at Point Loma on 14 November 1970 (Craig 1971). Another was seen roosting daily in Coronado from late December 1971 to 25 March 1972 (AB 26:655, 1972). One was heard calling near Julian on 8 July 1971 (AB 25:907, 1971).

Subspecies: Craig (1971) identified the bird at Point Loma as the eastern *C. v. vociferus* Wilson on the basis of its short wings and entirely black rectal bristles. However, Hubbard and Crossin (1974) found much overlap in all morphological characteristics between nominate *vociferus* and *C. v. arizonae* (Brewster), and considered separation of the two races by plumage "to be tentative at best." Therefore, they expressed "considerable reservation" about the subspecific identity of the bird at Point Loma. Collins (1975) reported the only specimen from California, a vagrant at Long Beach, Los Angeles County, on 26 September 1973 as *arizonae*. The bird near Julian was undoubtedly *arizonae*, since sum-

mering Whip-poor-wills in the San Jacinto Mountains, Riverside County, can be identified as this race by their song (Jones 1971).

Swifts

Family Apodidae

BLACK SWIFT

Cypseloides niger borealis (Kennerly)

Very rare spring migrant, accidental in fall. Black Swifts have been noted ten times from early May to early June. Belding (1890) reported "a flock of 20 or more" at San Diego on 21 and 22 May 1881, and collected a specimen (no longer extant) on the latter date. A bird found dead under a telephone wire 6 km (4 miles) north of Escondido on 5 June 1921 is preserved as MVZ 41912 (Dixon 1921). A flock of 300 was observed at Carlsbad on 29 May 1948 (AFN 2:189, 1948). Five were reported near San Diego on 2 May 1959 (AFN 13:401, 1959), one was seen at Point Loma on 22 May 1969 (AFN 23:626, 1969), and another was seen at Palomar Mountain on 9 May 1979 (AB 33:806, 1979). In 1980, up to 40 were present at Buena Vista Lagoon between 21 and 24 May, and three were noted at Lake Henshaw on 30 May (AB 34:816, 1980). Observations in 1981 were of one at San Elijo Lagoon on 19 May (J. Oldenettel) and two at Lake Henshaw on 18 May (R. Higson). The single fall report is of a bird seen at Escondido on 24 October 1963 (AFN 18:74, 1964).

CHIMNEY SWIFT

Chaetura pelagica (Linnaeus)

Casual visitor in late spring and summer. Four records: two at La Jolla, 22-27 June 1968; six at San Elijo Lagoon, 29 June - 22 August 1968 (one collected on 12 July, SD 36690); four in Mission Valley 16 km (10 miles) from the coast, 19 June 1969 (Devillers 1970b); and one or two at Oceanside, 31 May 1974 (AB 28:863, 1974).

VAUX'S SWIFT

Chaetura vauxi vauxi (Townsend)

Common to very common spring migrant; uncommon to fairly common fall migrant. Irregular, but sometimes common to very common localized winter visitor in coastal northern San Diego County. Migrating Vaux's Swifts occur over all types of habitats, probably throughout San Diego County. They are seen most frequently in the coastal lowland, and are rare on the eastern slope (three at Carrizo Marsh on 6 May 1978, P. Unitt). In spring, often large flocks are seen during cloudy weather, with numbers as high as 500 at Presidio Park on 20 April 1967 (G. McCaskie), and 400 at Buena Vista Lagoon on 22 April 1980 (W. T. Everett). Most spring migrants move through from mid-April to mid-May; extreme dates are 4 April (1981, San Diego, AB 35:862, 1981) and 24 May (1978, one at Point Loma, P. Unitt).

The two summer reports (AFN 13:456, 1959; 14:478, 1960) should be disregarded, since it is unlikely the birds were critically distinguished from Chimney Swift, now known to be the more frequent *Chaetura* in southern California in summer.

In fall, the Vaux's Swift is considerably less abundant than in spring, but concentrations of up to 100 (16 September 1977, Tijuana River Valley) have been seen. Fall dates extend from 12 September (1977, one in the Tijuana River Valley, P. Unitt) to 19 October (1975, one at the Otay River mouth, J. Dunn).

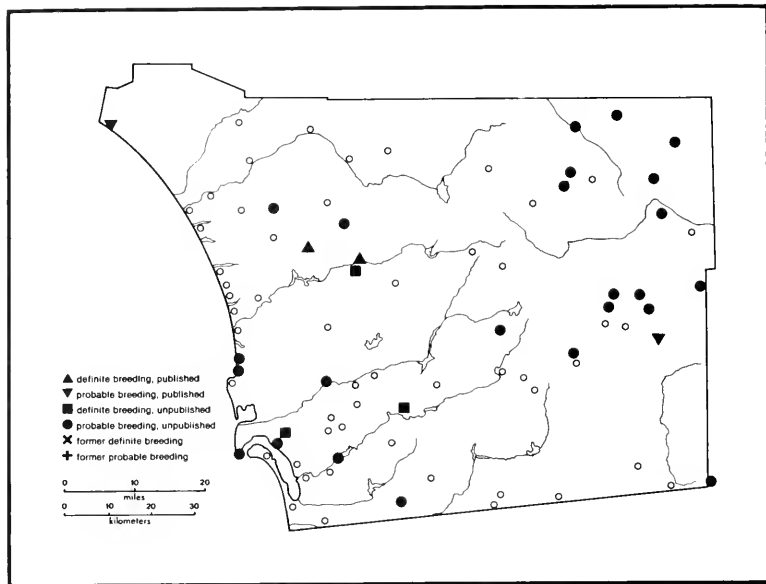
In winter, the species occurs annually at Guajome Lake. Maximum numbers recorded are 140 on 22 December 1979 (J. Dunn), 100 from 30 January - 17 March 1969 (AFN 23:522, 1969), 100 on 31 March 1970 (AFN 24:539, 1970) and 150 on 5 January 1980 (AB 34:307, 1980). More usual are 25-30 as on 7 January and 15 March 1977 (AB 31:374, 1977). Wintering Vaux's Swifts have also been noted a few times at Whalen Lake (such as six on 16 February 1976, J. Dunn; 65 on 22 December 1979, G. McCaskie), and in the lower Santa Margarita River Valley (one on 13 March 1978, P. Unitt; three on 22 December 1979, J. DeBeer). Farther south, there are winter reports from San Elijo Lagoon (one on 6 and 22 March 1964, AFN 18:388, 1964), San Diego (two during the winter 1959-1960, AFN 14:343, 1960), Escondido (one on 22 January 1980), and Old Mission Dam (five on 15 January 1980, AB 34:307, 1980).

WHITE-THROATED SWIFT

Aeronautes saxatalis (Woodhouse)

Common to very common resident. White-throated Swifts may be found most consistently around rocky cliffs or sandy bluffs, situations where they can find the crevices in vertical faces they require for roosting and nesting. They are also seen around tall concrete bridges, and around tall buildings in downtown San Diego, artificial structures that probably serve as acceptable substitutes. The species occurs, and probably nests, anywhere in San Diego County where such habitat is present. Sea-bluffs at Point Loma and Torrey Pines State Park, rocky crags at 1830 m (6000 ft.) elevation near Mount Laguna, and sandy bluffs at Palm Spring in the Anza-Borrego Desert are localities frequented by White-throated Swift, illustrating its great altitudinal and geographic range. Foraging and migrating birds disperse widely over all terrestrial habitats.

White-throated Swifts are not sedentary, but regular seasonal variations in their abundance are not known in San Diego County. Large concentrations, such as 200 at San Elijo Lagoon on 6 March 1964 (G. McCaskie) and 1000 at Santee on 14 November 1977 (J. Dunn) probably involve migrants. During the winter, the birds are absent from high-altitude localities, such as Cuyamaca Peak and Mount Laguna, where they occur in summer, but nothing is known of their movements in or out of these areas.



MAP 34. Breeding Distribution of White-throated Swift (*Aeronautes saxatalis*)

Since White-throated Swifts nest in nearly inaccessible situations, little is known of their breeding in San Diego County. The only egg set from the county in WF was taken in Bandy Canyon near San Pasqual Valley on 26 May 1913; Sharp (1907) reported "quite a colony" at San Pasqual, and found several nests with eggs there in 1898. A set of eggs was collected near Escondido on 18 May 1913 (from Willett 1933), and another was taken at Dehesa on 19 May 1929 (SBCM). A female taken on 23 May 1940 in Balboa Park (SD 18184) has "laying" recorded on its label, and the swifts occur regularly there throughout the breeding season at the Laurel Street bridge (A. M. Rea).

Hummingbirds

Family Trochilidae

BROAD-BILLED HUMMINGBIRD

Cyanthus latirostris Swainson

Very rare fall and winter visitor. Eight records between 20 September and mid-March: one in San Diego from 10 November 1961 to mid-March 1962; one in the Tijuana River Valley on 14 October 1962; two in the Tijuana River Valley on 9 November 1963 (McCaskie 1970c); one at Agua Caliente Springs from 16 January to 10 February 1977 (AB 31: 374, 1977); one in the Tijuana River Valley 20-23 September 1977 (AB 32:259, 1978); one in Spring Valley 8-10 March 1979 (AB 33: 314, 1979); one in Balboa Park

from 28 November 1979 to 29 February 1980 (AB 34:202 and 307, 1980) and from 30 November 1980 to 14 January 1981 (AB 35: 336, 1981).

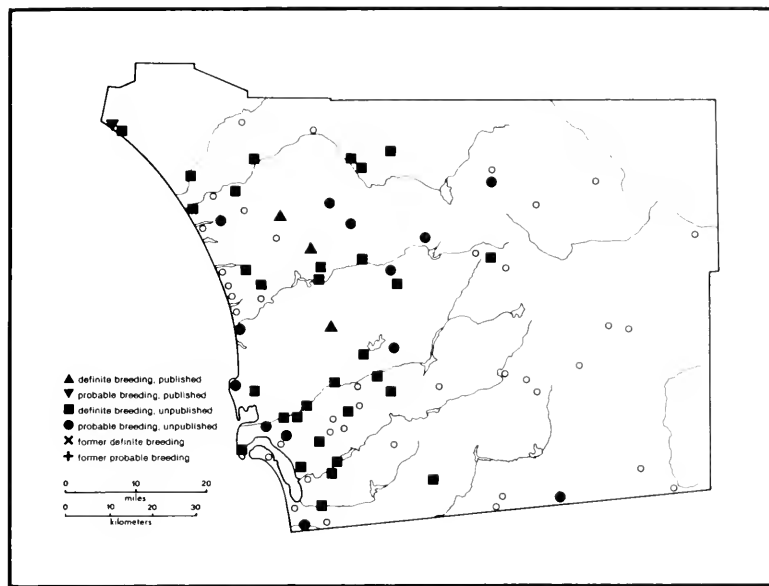
Subspecies: No specimen, but presumably *C. l. magicus* (Mulsant and Verreaux) which breeds from southern Arizona south to Colima.

BLACK-CHINNED HUMMINGBIRD

Archilochus alexandri (Bourcier and Mulsant)

Fairly common migrant and summer resident, casual in winter. Black-chinned Hummingbirds inhabit groves of sycamores, riparian woodland, live oak woodland, orchards, and parks in the coastal lowland. They probably occur locally in the foothill zone as well (specimens from Warner Valley and Campo in SD). E. Beemer found a nest with eggs at Palomar Mountain on 30 May 1950, and WF has an egg set collected at Wynola on 21 May 1935. Black-chinned Hummingbirds are uncommon spring migrants in the Anza-Borrego Desert, but it is not known if they remain through the summer and breed there. Egg dates (97), 16 April - 7 July; 78% are for May. Sharp (1907) found eggs at Escondido 15 April - 23 July.

The first Black-chinned Hummingbirds of spring usually arrive in early April; 17 March (1976, Santee Lakes, AB 30:886, 1976) is the earliest recorded date. No large migratory concentrations have been noted in spring; the maximum seen in a day is 10 as in the Tijuana River Valley on 11 April 1964 (G. McCaskie) and at Point Loma on 16



MAP 35. Breeding Distribution of Black-chinned Hummingbird (*Archilochus alexandri*)

April 1977 (P. Unitt). In fall, adult males depart during August, but females or immatures remain regularly to late September. The latest known dates are 9 October (1978, one in the Tijuana River Valley, AB 33:214, 1979) and 12 October (1980, one at Point Loma, AB 35:227, 1981). Fall migration peaks in late August and early September, with a maximum of 15 recorded in the Tijuana River Valley on 27 August 1978 (P. Unitt).

The Black-chinned Hummingbird has been critically identified three times in winter in Balboa Park: one on 14 December 1974 (AB 29:582, 1975), one from 15 December to 2 February 1980 (AB 34: 307, 1980) and one from 20 December 1980 to 18 January 1981 (AB 35: 336, 1981). All birds were females or immatures which experienced observers J. Dunn, L. Bevier, and P. Lehman carefully distinguished from Costa's Hummingbird by their diagnostic call notes (see Stiles 1971). Other winter records, such as two near San Diego on 26 December 1955 (AFN 10:283, 1956), should be disregarded.

COSTA'S HUMMINGBIRD

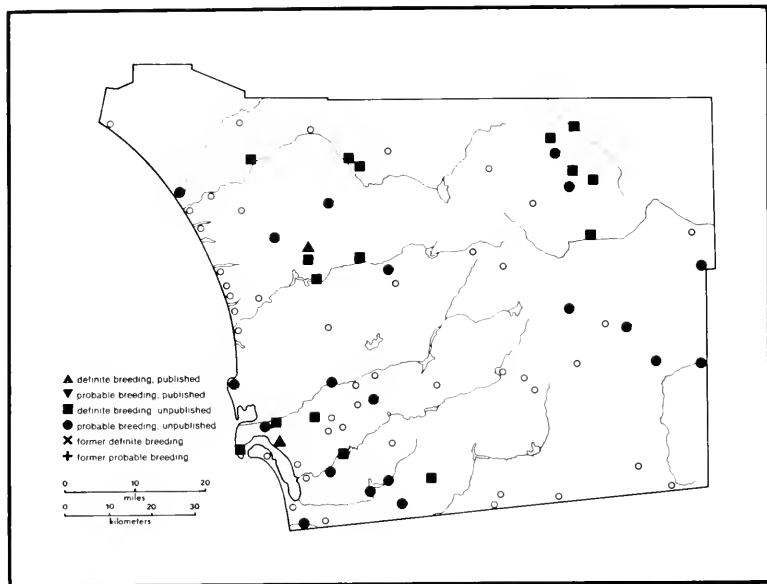
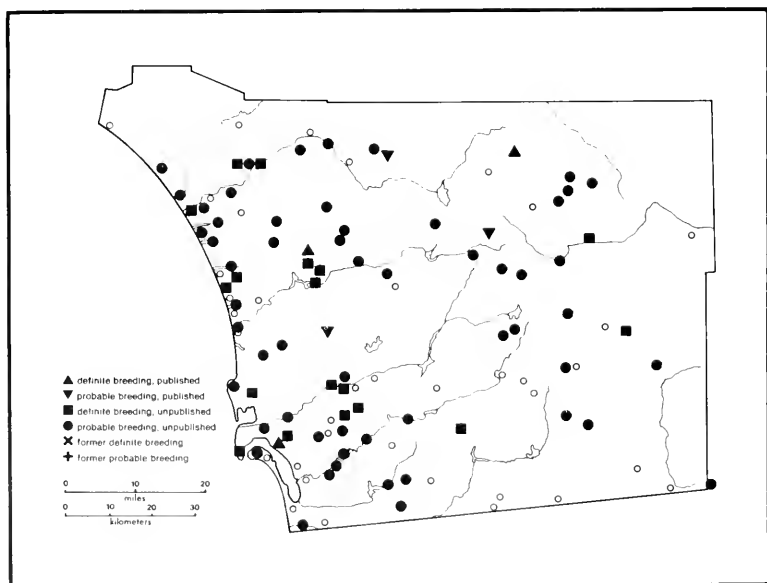
Archilochus costae (Bourcier)

The Costa's Hummingbird ranges throughout San Diego County, but its seasonal status varies greatly among different regions and habitats. It is a fairly common breeding summer resident in coastal sage scrub, chaparral, and dry weedy brush in the coastal lowland, occurring from mid-March to late September. The Costa's prefer situations drier on the

average than those frequented by Black-chinned Hummingbirds, but the two species occur in close proximity at many places. Egg dates for the coastal lowland (26), 13 April – 13 June; Sharp (1907) reported 2 July. Costa's Hummingbirds also inhabit residential neighborhoods and parks, where they remain fairly commonly throughout the year. Winter occurrence of this species along the coast is a recent event, the result of urbanization and the cultivation of ornamental plants which flower throughout the year. All the early writers found it only in spring and summer. Costa's Hummingbirds are especially numerous in areas where the introduced tree-tobacco (*Nicotiana glauca*) flourishes (20 in the Tijuana River Valley on 4 January 1964, G. McCaskie).

In the foothills and mountains, the species is an uncommon summer visitor, but there are no nesting records. Possibly its occurrence in those areas is the result of post-breeding dispersal from lower elevations. The Costa's Hummingbird has been seen up to the highest elevations in San Diego County: "a few pairs" at Palomar Mountain in June 1897 (McGregor 1899), four near the summit of Cuyamaca Peak on 8 July 1978; one along Agua Dulce Creek in the Laguna Mountains on 14 June 1977 (P. Unitt).

Costa's Hummingbirds breed commonly in desert scrub east of the mountains. Their seasonal status in the Anza-Borrego Desert needs clarification, but apparently the birds are present only in winter and spring, with dates extending from 11 November (1975, two in Coyote Creek Canyon,

MAP 36. Breeding Distribution of Costa's Hummingbird (*Archilochus costae*)MAP 37. Breeding Distribution of Anna's Hummingbird (*Archilochus anna*)

J. Dunn) to 28 May (year?, feeding young in Cougar Canyon, ABDSP file). Egg dates for the Anza-Borrego Desert (3), 30 March – 11 April.

ANNA'S HUMMINGBIRD

Archilochus anna (Lesson)

Common resident. The Anna's Hummingbird is by far the most widespread and numerous hummingbird in San Diego County. During spring and summer, it occurs throughout the coastal lowland, foothill, and mountain zones, and near springs and in gardens in the Anza-Borrego Desert. The habitat needs of the Anna's Hummingbird are very generalized. It occurs in all areas with nectar-bearing flowering plants except in open desert scrub. On the coastal slope, definite nest records are all for the lowland zone, but this probably indicates only lack of study at the higher elevations. In the Anza-Borrego Desert nests were seen at Agua Caliente County Park on 5 May 1974 (A. Fries) and at Yagui Well on 2 May 1958 (ABDSP file); a female was collecting nest material at Tamarisk Grove on 2 February 1978 (P. Unitt). Anna's Hummingbirds probably breed in suitable habitat throughout this area.

Anna's Hummingbirds remain all year in the lowland, but leave the mountain zone during the winter. A late fall observation at Santa Ysabel (one on 5 November 1978, P. Unitt) suggests the species winters uncommonly up to an altitude of at least 910 m (3000 feet). Nothing is known as yet of the timing of its movements in or out of the higher elevations, nor of its seasonal status on the desert slope.

Egg dates (27), extend from 29 January to 5 June, to 20 July according to Sharp (1907); but the species probably breeds nearly year round in places where ornamental plants flower continuously. A nest with one egg and one recently hatched chick was found at Old Mission Dam on 31 December, 1974 (J. Dunn), while a bird was still gathering nest material at this same locality on 3 August 1974 (P. Unitt).

Anna's Hummingbirds have always been common in San Diego County, but urbanization has provided them with ideal habitat and a secure, year-round food supply, so the population is now much greater than in 1900. Sharp (1907) and Dixon (1912) considered Black-chinned and Costa's the commonest hummingbirds at Escondido; now Anna's surpasses them in man-made habitats, and often in natural situations as well.

CALLIOPE HUMMINGBIRD

Stellula calliope (Gould)

Rare to uncommon spring migrant, one record each for summer and fall. Calliope Hummingbirds have been noted at several places on the coastal slope of San Diego County, mostly in the lowland, but also in the foothill and mountain zones (two in the Volcan Mountains on 15 April 1885, Belding 1890; Warner Hot Springs, April 1967, SD 36709; one at Paso Picacho Campground on 30 April 1978, P.

Unitt), and once in the desert (one in Coyote Creek Canyon on 26 March 1979, B. Cord). The species is most often found in parks or similar areas where ornamental plants provide an abundance of nectar-bearing flowers. Usually only one individual is noted in a day; the maximum is four at Point Loma on 16 April 1972 (G. McCaskie). Reports of Calliope Hummingbirds are concentrated in mid and late April. Extreme dates are 25 March (1967, San Diego, AFN 21:541, 1967) and 8 May (1974, one in Presidio Park, J. Dunn), except for an early bird seen at Presidio Park on 5 March 1976 (AB 30:892, 1976).

One to two Calliope Hummingbirds were observed at Hot Springs Mountain in June and July 1980, including a displaying pair on 24 June (Unitt 1981). This represents a slight southward extension of the species' summer range in California. It had previously been reported as probably breeding south in the San Jacinto Mountains, Riverside County, but also in the Sierra San Pedro Martir in Baja California.

The only fall report is of a single bird in the Tijuana River Valley on 26 September 1981 (E. Copper).

BROAD-TAILED HUMMINGBIRD

Selasphorus platycercus Swainson

Accidental, one record. R. Higson saw and heard an adult male at Palomar Mountain 11-12 July 1978 (AB 33:218, 1979). One reported from the Tijuana River Valley on 8 September 1968 (AFN 23:109, 1969) may have been misidentified.

Subspecies: No specimen, but undoubtedly nominate *platycercus*, which nests from the Great Basin and Rocky Mountain regions of the western United States south in mountains to southern Mexico. Clark and Kingdon mountains, eastern San Bernardino County, are the species' breeding localities nearest San Diego County. There are also two summer reports from the San Bernardino Mountains (Garrett and Dunn 1981).

RUFous HUMMINGBIRD

Selasphorus rufus (Gmelin)

Fairly common to common spring and fall migrant, rare winter visitor. Its status is difficult to determine, particularly in fall and winter, because of its similarity to Allen's Hummingbird. Rufous Hummingbirds may be found around nectar-bearing flowering plants throughout San Diego County; they do not seem tied to any specific habitat during migration. In spring, they are most numerous in the coastal lowland, but have been recorded as high as Julian in the mountains (24 March 1892, SD 465), and occur uncommonly in the Anza-Borrego Desert (maximum 18 at Lower Willows in Coyote Creek Canyon on 26 March 1979, B. Cord). Spring arrival is usually in mid or late February; Cooper (1870) recorded first arrivals on 5 February 1862 at San Diego, and there is one January report (one at Valley Center on 27 January 1974, AB 28:693, 1974). Migration

peaks from early March to mid-April. The species is rare after the end of April, and 12 May (1976, one male at Point Loma, J. Dunn) is the latest spring date.

In fall migration, 22 June (1970, one banded at Point Loma, AFN 24:717, 1970) is the earliest recorded date, and the species is numerous by early July. The latest fall date for a positively identified Rufous Hummingbird is 20 August (1908, Cuyamaca Mts., MVZ 3983; 1956, San Diego, SD 30049), but female or immature *Selasphorus*, probably *rufus*, are fairly common until late September, uncommon in early October. One in the Tijuana River Valley on 13 October 1974 (P. Unitt) was in dry brush habitat and probably still migrating. A specimen from Point Loma (SD 37615) has only "October 1968" recorded on its label; it could have been a potentially wintering bird taken late in the month.

In late fall and early winter, *Selasphorus* have been found only around flowering ornamental plants in parks and gardens, particularly in eucalyptus. They occur annually in Balboa Park, where a maximum of eight was seen on 20 December 1975 (J. Dunn). Other localities are Pauma Valley (one on 21 December 1968, E. Beemer), Oceanside (one on 2 January 1978, G. McCaskie), Point Loma (one on 10 January 1965, G. McCaskie, a female reported as "Rufous," AFN 19:417, 1965; one on 18 December 1976, C. Edwards), Coronado (one on 15 December 1979, R. Webster), and Tijuana River Valley (one on 8 January 1967, G. McCaskie; one from 29 October to 16 December 1978, E. Copper). Most winter *Selasphorus* are females or immatures which have not been identified to species, but two adult males were seen in Balboa Park 17 - 24 December 1977 (D. Herron), and the October specimen mentioned above was in suitable wintering habitat. There is no indication of how the birds reported as "Rufous Hummingbirds" on San Diego Christmas bird counts on 2 January 1961, 31 December 1961, and 23 December 1962 were identified.

ALLEN'S HUMMINGBIRD

Selasphorus sasin (Lesson) subsp.

Uncommon to fairly common spring and fall migrant, rare or casual winter visitor.

The status of Allen's Hummingbird is still not well understood because of its extreme similarity to Rufous Hummingbird; even adult males can not always be safely distinguished in the field. There are no differences in habitat preference between the two species, and they are often found together. Allen's Hummingbird is known in spring only from the coastal lowland. Spring dates extend from 20 January (1974, one male at Presidio Park) to 10 April (1971, female mist-netted and measured at Point Loma, G. McCaskie); an exceptional specimen collected at Point Loma on 25 April 1971 is discussed below, under subspecies. Migration peaks from mid-February to early March. Seldom are more than 10 Allen's Hummingbirds identified in a day, but G. McCaskie saw an extraordinary

concentration of 200 in the Tijuana River Valley on 15 February 1964.

During fall migration, Allen's Hummingbird occurs up to the mountain zone as well as in the coastal lowland, but there is no record at any season for the Anza-Borrego Desert. Fall dates extend from 15 June (1970, Pauma Valley, E. Beemer) to 1 September (1970, one at Point Loma, AFN 24:717, 1970), with two exceptionally early birds banded at Point Loma on 4 June 1970 (AFN 24:717, 1970). There is no evidence to indicate that the bird reported as an Allen's Hummingbird at Escondido on 27 October 1955 (AFN 10:58, 1956) was critically identified.

Some proportion of the *Selasphorus* hummingbirds remaining to winter in San Diego County are Allen's. One specimen of Allen's is preserved, a male from Coronado on 29 November 1968 (SD 37875), and one was mist-netted and banded at Point Loma on 1 January 1968 (AFN 22:479, 1968). There are five sight records of single apparent adult males in Balboa Park: 6 December 1974 (J. Dunn), 20 December 1975 (R. Higson), 14 - 18 December 1976 (AB 31: 374, 1977), 21 November 1975, and 6 January 1978 (P. Unitt). It is doubtful if the "Allen's Hummingbird" reported 2 January 1961 on a San Diego Christmas bird count was critically identified.

Subspecies: The race which migrates commonly through San Diego County is *S. s. sasin* (Lesson), breeding in the coastal strip from southwestern Oregon to Ventura County. All local specimens except one are of this subspecies. The exception is the specimen collected at Point Loma on 25 April 1971 (SD 37764) which has such a long bill (18 mm) that it must be *S. s. sedentarius* Grinnell. *Sedentarius* is resident on the Channel Islands and Palos Verdes Peninsula, and may be expanding its range in Los Angeles and Orange Counties.

Kingfishers

Family Alcedinidae

BELTED KINGFISHER

Ceryle alcyon (Linnaeus)

Uncommon to fairly common migrant and winter visitor, rare in summer, with two old breeding records. Belted Kingfishers are found in a variety of aquatic habitats, wherever they can catch small fish: lakes, small ponds, rivers, lagoons, estuaries, and the salt water of Mission and San Diego bays. They are most numerous in the coastal lowland, since suitable habitat is most extensive in this zone, but also occur locally in the foothills (one at Mesa Grande on 18 November 1978, P. Unitt; one at Lake Morena on 29 July 1977, J. Dunn). On the eastern slope, the Belted Kingfisher is primarily a rare spring migrant, with a specimen collected at Banner on 18 April 1899 (SD 419) and a few observations in Coyote Creek Canyon from March to May. One was also noted in upper Fish Creek Wash in October 1971 (ABDSP file).

Earlier writers (Belding 1890, Stephens 1919a, Sams and Stott 1959) considered Belted Kingfisher a year-round resident in San Diego County, but recent observations show a definite seasonal pattern. The species is seen in the south county regularly from early August through late April, with extreme dates 7 July (1979, two at Old Mission Dam, AB 33:897, 1979) and 13 May (1973, one at the same locality). A few birds remain through summer at streams and lakes in the north county, with sightings 5 km (3 miles) northeast of Bonsall (one on 19 June 1979, P. Unitt; 3 and 21 June 1980, S. Goldwasser), Harmony Grove (27 June 1978), Lake Wohlford (16 June 1979), Kit Carson Park (several observations, including a pair on 16 June 1980), San Pasqual Valley (pair on 6 June 1981), and Lake Hodges (11 July 1980, 3 July 1981). K. Weaver saw an individual flying from an opening in a sand bank in Kit Carson Park in April 1978, indicating a possible nest site. The site was destroyed shortly afterward by the Escondido parks department.

Definite nesting of Belted Kingfishers has been reported only twice. Carpenter (1917) found a nest on 20 April 1916 "along a road bordering a lagoon near Oceanside," in "dirt bluffs which formed the walls of a steep, narrow canyon." On 6 May, the nest was "full of young fully feathered." Willett (1933) reported that E. E. Sechrist found a nest with eggs "near San Diego" on 18 April 1905.

Subspecies: Phillips (1962) found too much overlap in size between eastern and western kingfisher populations to admit a larger western race *C. a. caurina* Grinnell.

Woodpeckers

Family Picidae

LEWIS' WOODPECKER

Melanerpes lewis (Gray)

Uncommon to fairly common winter visitor, preferring open woodland or woodland edges, particularly of live oaks. Lewis' Woodpeckers occur primarily in the foothill and mountain zones, and have been reported in recent years most frequently from Mesa Grande (up to 18 on 2 December 1978, AB 33: 315, 1979). Some other favorable localities are San Felipe (six on 5 November 1978, P. Unitt), Santa Ysabel to Witch Creek (10 on 8 December 1906, Marsden 1907; many recent reports), and Lake Cuyamaca (20 on 5 February 1966, AFN 20:460, 1966). Probably because of lack of study, there is only one report for the foothills or mountains south of Cuyamaca State Park, of one bird at Flying K Sanctuary 27-29 April 1978 (R. Ford). Lewis' Woodpeckers occur uncommonly down to the upper parts of the coastal lowland, as indicated by observations at Pauma Valley (E. Beemer), Lilac, Valley Center, and Ramona (A. Fries). There are no records for the Anza-Borrego Desert or anywhere in the county east of San Felipe and Lake Cuyamaca ("Laguna Mts." of AB 30: 127, 1976 and 33: 315, 1979 is an error for Santa Ysabel). In most of the lowland zone, Lewis' Woodpecker is very rare, par-

ticularly along the coast. Single individuals have reached La Jolla (24 September 1927, Abbott 1928a), Point Loma (30 September 1973, AB 28:108, 1974), and the Tijuana River Valley (24 September 1964, AFN 19:79, 1965). Fall arrival of Lewis' Woodpeckers is generally in late September or early October; 15 September (1950, one at Palomar Mountain, E. Beemer) is the earliest recorded date. In spring, numbers decrease through March and April as the birds migrate north; the latest report is for 6 May (1976, one at Mesa Grande, B. Cord).

ACORN WOODPECKER

Melanerpes formicivorus bairdi Ridgway

Common resident. Acorn Woodpeckers are closely associated with oak trees, which the birds require for acorns, their staple food. They occupy both dense and sparse live-oak woodland, and coniferous woodland containing the deciduous black oak (*Quercus kelloggii*). The species is common and widespread in the foothill and mountain zones, more localized in the coastal lowland, particularly in the southern half of the county. Its breeding range does not reach the coast, except in extreme northern San Diego County at San Onofre ("not common," Dixon 1906). On the eastern slope of the mountains, Acorn Woodpeckers occur east to San Felipe, Banner, and Boulevard. The species is basically sedentary, but individuals rarely wander to areas just outside the main range, where oaks are too sparse to support a breeding population; an example is Old Mission Dam (one on 8 June and 13 September 1975, D. Ramsey). Nearer the coast in southern San Diego County, Acorn Woodpecker is a very rare vagrant in fall and winter, with 11 reports between 1 September (1980, one at Point Loma, AB 35:227, 1981) and 20 January (1978, one in Balboa Park, AB 32:400, 1978). The unique observation of a spring vagrant was of a single bird at Point Loma 4-6 June 1979 (AB 33:806, 1979). One was reported at Peña Spring in the desert-edge zone on 28 April 1973, and another was at Fish Creek Ranger Station in the Anza-Borrego Desert in mid-May 1973 (ABDSP file). Egg dates (13): 12 May - 18 June.

YELLOW-BELLIED SAPSUCKER

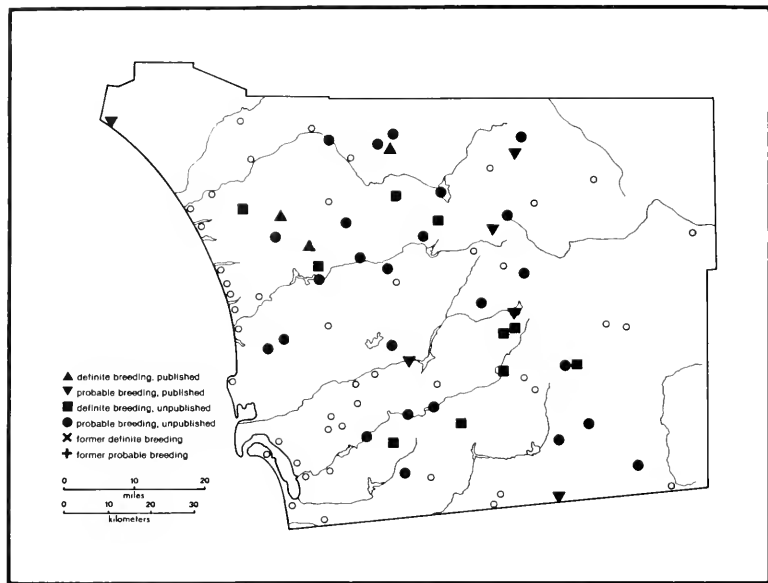
Sphyrapicus (varius) varius (Linnaeus)

Accidental. One immature was seen at Santa Ysabel on 11 November 1975 (J. Dunn and P. Unitt, AB 30:127, 1976). Devillers (1970a) reported a male probably of this form seen at Imperial Beach on 20 December 1969. *Sphyrapicus (v.) varius* breeds from northeastern British Columbia east through the boreal forest of Canada and the northeastern United States. It reaches California as a casual vagrant only.

RED-NAPED SAPSUCKER

Sphyrapicus (varius) nuchalis Baird

Uncommon winter visitor. The habitat preferences of the Red-naped Sapsucker in winter are the same as those of



MAP 38. Breeding Distribution of Acorn Woodpecker (*Melanerpes formicivorus*)

Red-breasted, and the distribution of the two in San Diego County are similar. Although there are no reports from the mountain zone, the Red-naped Sapsucker occurs up to the upper foothills, where it is as numerous as anywhere (three at Santa Ysabel on 26 November 1977, P. Unitt). Sapsuckers of unknown form have been reported rarely in deciduous trees in the Anza-Borrego Desert; Red-naped is probably the more likely in this area. On the coastal slope, Red-naped is somewhat less numerous than Red-breasted. The numbers of specimens in SD indicate the ratio of abundance between the two forms: 9 *nuchalis*, 15 *daggetti/ruber*. There are also two hybrids, as reported by Devillers (1970a): a male collected at Dehesa on 15 February 1914 (SD 31644), and a female from Wildcat Canyon 8 km (5 miles) northeast of Lakeside on 10 October 1957 (SD 30058). Red-naped Sapsuckers occur regularly from early October through early March, rarely to late March. Extreme dates are 27 September (1970, one at Point Loma, G. McCaskie) and 1 April (1973, one in Los Peñasquitos Canyon, P. Unitt).

Red-naped Sapsuckers breed from south-central British Columbia south through the Great Basin and Rocky Mountains to the White Mountains of Inyo County, California, and to central Arizona.

RED-BREASTED SAPSUCKER

Sphyrapicus (varius) ruber (Gmelin) subssp.

Uncommon winter visitor; rare and localized breeding sum-

mer resident. Wintering sapsuckers visit all woodland habitats in San Diego County, showing some preference for broad-leaved deciduous trees such as alder and cottonwood. The birds are also attracted to a variety of non-native trees, notably eucalyptus and pepper trees (*Schinus molle*). Migrating birds will stop at small, isolated clumps of any sort of tree in open country. The species is probably most numerous in the foothill zone, but it occurs widely also in the coastal lowland. There is little information from the mountains, but the Red-breasted Sapsucker occurs at least rarely in this zone both during migration and in winter (Palomar Mountain, 10 December 1933, SD 19091). Fall migrants usually begin arriving in early October; 23 September (1972, one at Point Loma, G. McCaskie) is the earliest date. The timing of spring departure is less well known; there are few reports after the beginning of March, and 24 March (1978, one at Lake Morena, J. Dunn) is the latest date reported.

Red-breasted Sapsucker is a rare summer resident in mixed coniferous-deciduous woodland on Palomar Mountain. Devillers (1970a) reported that A. G. Morley had seen the species regularly at Palomar Mountain State Park since 1957 from May (March in 1970) to September. An adult was feeding young in an alder at elevation 1400 m (4600 feet) on 26 June 1966, and a fledgling was seen on 13 July 1970. In the summers of 1970 and 1980, three pairs were reported nesting (AFN 24:718, 1970; 34:930, 1980). R. Higson noted five pairs at Palomar Mountain in summer

1981, and collected a specimen on the observatory grounds on 5 June 1981 (SD 41516). There is one breeding-season observation in the Cuyamaca Mountains, of a bird seen entering a hole in a tree 1.6 km (1 mile) north of Paso Picacho on 10 May 1974 (P. Unitt).

Subspecies: Most Red-breasted Sapsuckers reaching San Diego County are *S. r. daggetti* Grinnell, which breeds from southern Oregon south to San Diego County. One specimen of *S. r. ruber* (Gmelin), breeding north of *daggetti* in the Pacific Northwest, has been collected in the county: 9 November 1957, Wildcat Canyon 8 km (5 miles) northeast of Lakeside (Devillers 1970a, SD 30061).

WILLIAMSON'S SAPSUCKER

Sphyrapicus thyroideus (Cassin) subsp.?

Very rare winter visitor. Williamson's Sapsuckers occur in montane coniferous woodland, and have been noted most frequently around Paso Picacho Campground in Cuyamaca Rancho State Park. The species has also been recorded four times on Palomar Mountain, once at Julian (21 December 1975 – 22 March 1976, AB 30:768, 1976), and three times in the Laguna Mountains (one on 17 November 1975 and 5 November 1977, M. Thornburgh; one on 5 November 1978, AB 33:214, 1979). Williamson's Sapsucker is accidental in the lowlands, where there are two records: one at Bonita 16 December 1968 – March 1969 (AFN 23:522, 1969), and one near Lakeside 25 November 1972 – 1 February 1973 (AB 27:122 and 664, 1973). Dates of observations extend from 27 September (1980, Palomar Mountain, AB 35:227, 1981) to 10 April (1979, same locality, AB 33:806, 1979).

Subspecies: Since no specimens have been collected, it is not possible to determine which of the two races, *S. t. thyroideus* (Cassin), breeding in the Cascades, Sierra Nevada, and high mountains of southern California, or *S. t. nataliae* (Malherbe), breeding in the Rocky Mountains and Great Basin, is reaching San Diego County. *Thyroideus* breeds closer to this area, but *nataliae* is more strongly migratory.

LADDER-BACKED WOODPECKER

Dendrocopos scalaris cactophilus (Oberholser)

Uncommon resident in riparian woodland, piñon-juniper woodland, desert-edge scrub, and desert wash scrub in the Anza-Borrego Desert. The species' range extends west to Coyote Creek Canyon (four at Lower Willows on 1 July 1978, S. Goldwasser), Borrego Palm Canyon, Angelina Spring, Granite Mountain (ABDSP file), Vallecito (Heermann 1859), and Mountain Palm Springs (one on 5 September 1978, P. Unitt). Ladder-backed Woodpeckers are seen especially often at Yaqui Well and Agua Caliente Springs. An egg set collected at Borrego on 6 April 1934 (WFVZ 48428) represents all that is known of the species' nesting in San Diego County.

Only once has a vagrant been identified on the coastal slope, a bird carefully studied in the Tijuana River Valley

on 9 October 1974 (J. Dunn and P. Unitt, AB 29:122, 1975). The two reported near Lakeside from 28 November 1951 through the following winter were undoubtedly misidentified Nuttall's Woodpeckers.

Delacour (1951) and Mayr and Short (1970) proposed considering the four-toed *Dendrocopos* woodpeckers congeneric with the three-toed *Picoides* woodpeckers. Although this merger has become popular, Rea (1983) urged that the two genera be kept separate, based on differences in skull as well as foot structure.

NUTTALL'S WOODPECKER

Dendrocopos nuttallii (Gambel)

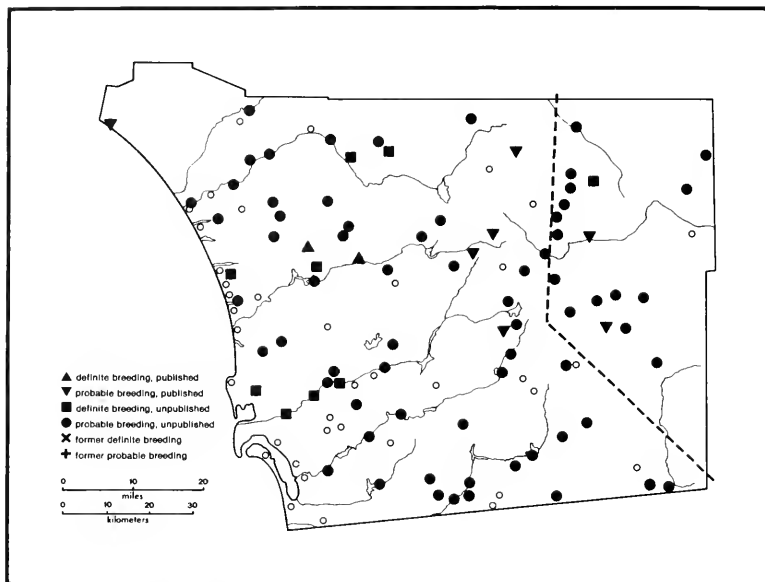
Fairly common resident. The Nuttall's Woodpecker is the most widespread breeding woodpecker in San Diego County, occupying riparian woodland, sycamore groves, sparse or dense live oak woodland, and coniferous woodland throughout the coastal slope. Its range extends from near the coast, as in the San Luis Rey River valley in Oceanside, at San Elijo Lagoon, and in Mission Valley, up to near the summits of Cuyamaca Peak (10 on 29 July 1978) and Hot Springs Mountain (two on 4 June 1980), and east on the desert slope to the San Felipe Valley (one on 2 February 1978), Banner (four on 15 April 1978), Mount Laguna (12 on 24 April 1977, P. Unitt), and Jacumba (one on 13 July 1964, J. Dunn). Also, single individuals have been noted twice at Lower Willows in Coyote Creek Canyon (29 October 1973, A. Morley; 20 February 1978, B. Cord). More study at this locality is needed to determine if these birds were only wanderers or if Nuttall's and Ladder-backed are actually sympatric here. Nuttall's Woodpeckers wander casually to parks in urban areas where they do not breed (one at Point Loma on 14 September 1975, AB 30:127, 1976; one in Balboa Park on 15 November 1977, D. Herroni).

Egg dates (14), 19 April – 15 June; Sharp (1907) gives the range 15 April – 18 June. E. Beemer noted a pair beginning nest excavation at Pauma Valley as early as 25 February in 1978.

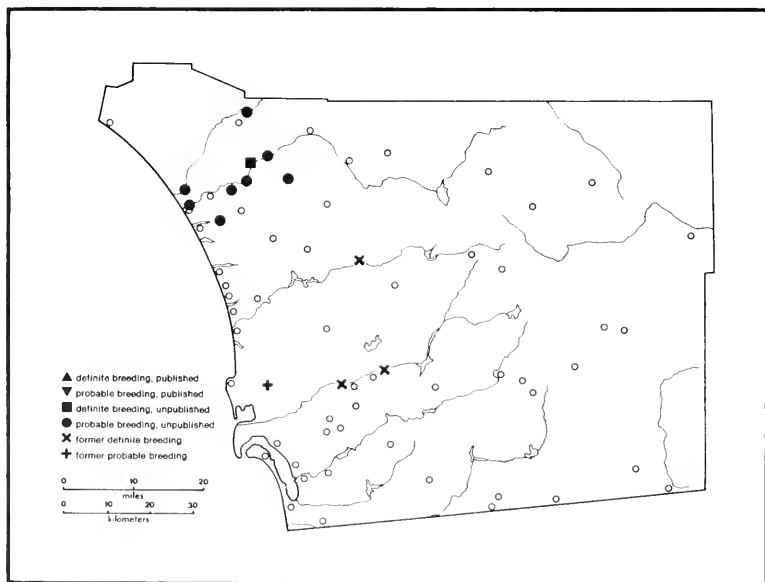
DOWNY WOODPECKER

Dendrocopos pubescens turati (Malherbe)

Rare to uncommon resident, restricted to lowland riparian woodland. Most recent observations have been made along the lower San Luis Rey River, from the narrow gorge near the river's mouth in Oceanside (three on 1 January 1979, G. McCaskie) to 5 km (3 miles) northeast of Bonsall (one on 16 July 1978, P. Unitt). The species seems most numerous in the area between Bonsall and Oceanside near where Highway 76 crosses the river (six on 26 August 1978, G. McCaskie; seven on 22 December 1979, D. Parker). It has been observed a short distance south of the San Luis Rey River at Guajome Lake (one on 8 July 1977, J. Dunn), on lower Buena Vista Creek (one on 1 January 1979, C. Edwards), and in Moosa Canyon near the intersections of Interstate Highway 15 and Old Castle Road (one on 25 June



MAP 39. Breeding distribution of Nuttall's Woodpecker (*Dendrocopos nuttallii*), west of the dashed line, and Ladder-backed Woodpecker (*D. scalaris*), to the east.



MAP 40. Breeding Distribution of Downy Woodpecker (*Dendrocopos pubescens*)

1978, S. Goldwasser). Downy Woodpeckers are probably resident along the entire course of the Santa Margarita River, having been observed near the river's mouth (two on 22 December 1979, E. Copper) and 3 km (2 miles) northeast of Fallbrook (one on 3 and 12 June 1978, S. Goldwasser). Occurrence farther north in Camp Pendleton is likely but has not been reported yet. The species is casual outside its limited range. Reports of wanderers are of one at Otay on 23 December 1967 (J. Greenberg), and one in the Tijuana River Valley on 6 August 1972 (G. McCaskie), one at Point Loma on 18 October 1980 (AB 35:227, 1981), and one in Mission Valley on 11 April 1981 (G. McCaskie).

The Downy Woodpecker was formerly more widespread in the coastal lowland, though it was never common. Sharp (1907) considered the species "rather rare" at San Pasqual. G. McCaskie saw an individual in San Clemente Canyon on 4 May 1962. Short (1971) reported two specimens of Downy Woodpecker and two of hybrids with Nuttall's Woodpecker collected in September and October 1949 along the San Diego River 3–5 km (2–3 miles) northeast of "Mission Fathers' Dam" (= Old Mission Dam) and 3 km (2 miles) northeast of Lakeside. Emerson's (1887) report of the species as "common among oak trees" at Poway is obviously erroneous, since he did not list Nuttall's Woodpecker. The causes of the decline of Downy Woodpecker in San Diego County are not known. Much of the bird's requisite riparian woodland habitat has been destroyed, but this can not account for its disappearance from areas where good habitat still persists, as around Old Mission Dam. Possibly the proliferation of European Starlings is a factor. Egg date (one from Bonsall): 30 April 1921; Sharp (1907) reported eggs at San Pasqual 22 April – 24 May.

HAIRY WOODPECKER

Dendrocopos villosus hyloscopus (Cabanis and Heine)
Uncommon resident of coniferous woodland. Hairy Woodpeckers occur in this habitat throughout the mountain zone of San Diego County, with records from Hot Springs Mountain (Unitt 1981), Palomar Mountain (8 and 10 July 1935, SD 19094–5; many observations, E. Beemer), Volcan Mountain (13 July 1908, MVZ 3946; "rather common," Blaisdell in Belding 1890; one on 24 March 1884, Emerson 1887), the Cuyamaca Mountains (Cooper 1874; 20 May 1893, SD 486; one at Pine Hills on 14 July 1976, A. Fries; Paso Picacho to Cuyamaca Peak, many reports; Green Valley Falls Campground, one on 24 February 1973 and two on 31 August 1975, P. Unitt), and the Laguna Mountains (8 June 1924, SD 31707; 15 January 1946, MVZ 94435; two at Agua Dulce Creek on 24 April 1977 and 25 June 1978, P. Unitt). The observation of two at Mesa Grande on 26 May 1976 (A. Fries) suggests the species is resident in oak woodland at some places in the upper foothill zone as well. One seen at Lake Morena on 3 October 1977 (J. Dunn) was more likely a wanderer. The Hairy

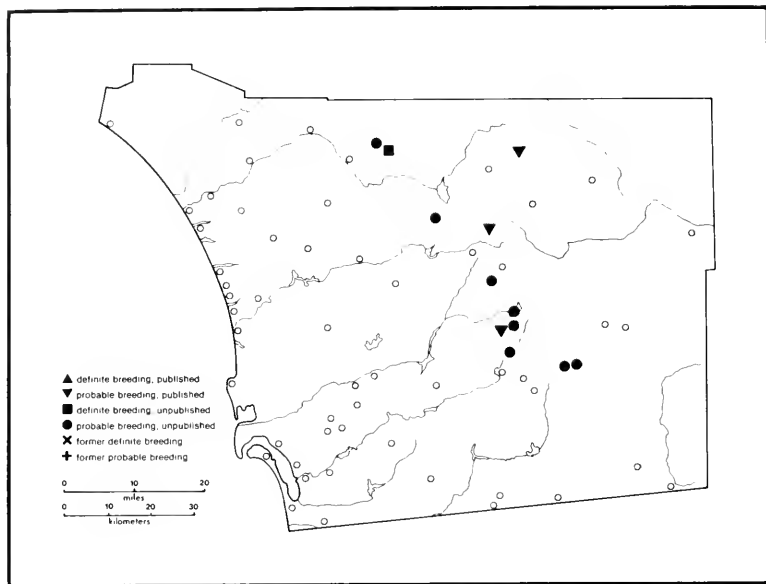
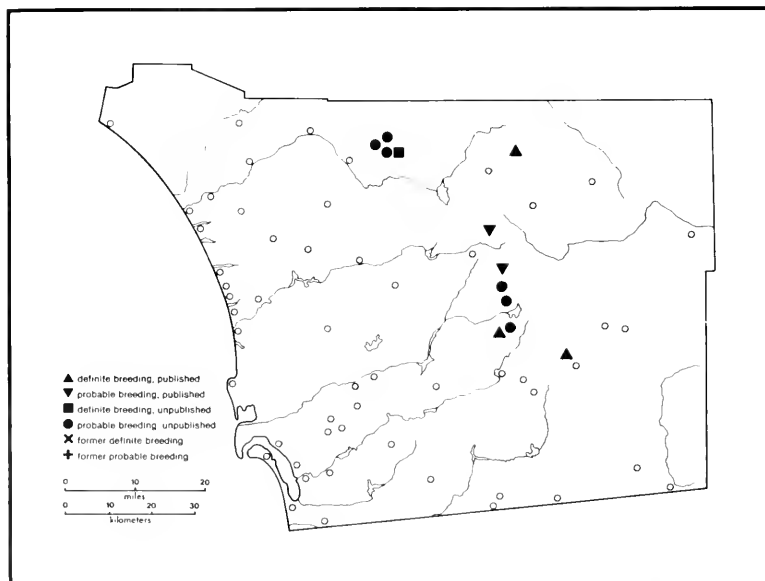
Woodpecker is a casual fall and winter vagrant to the coastal lowland, where there are six reports: one at Oceanside on 14 January 1973 (G. McCaskie), one at San Elijo Lagoon 20 September – 12 October 1975 (AB 30:127, 1976), one on lower Buena Vista Creek on 1 January 1977, one at Old Mission Dam on 9 October 1976 and 26 February 1980 (C. Edwards), and one at Otay from 15 December 1979 to 26 January 1980 (AB 34: 307, 1980).

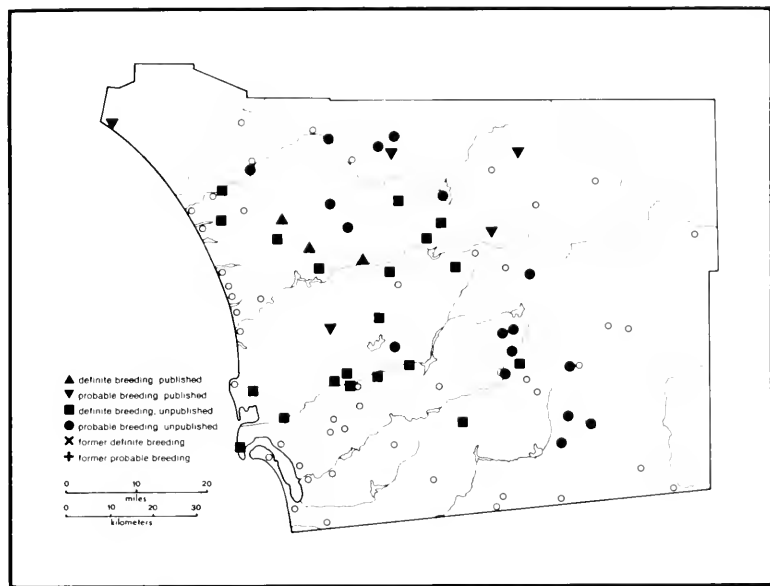
No egg sets of Hairy Woodpecker from San Diego County are preserved in WF. The only information on the species' breeding is E. Beemer's observation of nestlings being fed at Palomar Mountain on 6 June 1976.

WHITE-HEADED WOODPECKER

Dendrocopos albolarvatus graviorstris (Grinnell)

Uncommon and localized resident, restricted to montane coniferous woodland. White-headed Woodpeckers are probably most numerous on Palomar Mountain (many observations at several localities including Palomar County Park and Doane Pond, E. Beemer). Unitt (1981) found them fairly common in summer 1980 on Hot Springs Mountain. In the Volcan Mountains, Blaisdell (in Belding 1890) reported the species as rare on 21 August 1884, and Stephens collected a specimen on 4 August 1908 (MVZ 3841, Grinnell 1915). Marsden collected a specimen at Julian on 8 November 1906 (Willett 1912). In the Cuyamaca Mountains, Stephens (in Willett 1912) reported White-headed Woodpecker breeding "from 5800 to 7000 feet [1770–2130 m] altitude" [*sic*]. The species is seen regularly from Paso Picacho to the summit of Cuyamaca Peak (e.g., six adults and one juvenile on 29 July 1978, G. McCaskie), and occurs at William Heise County Park (two on 23 June 1975, M. Thornburgh; one on 15 September 1977, J. Dunn). The only specimen in SD (31793) was collected at "Cuyamaca Mts. North Park" (= North Peak?) on 19 November 1922. A bird seen at Green Valley Falls Campground on 15 October 1964 (A. Fries) was at a somewhat lower elevation than other records in the Cuyamaca Mountains. Since this is the only report from this locality, it may indicate short-distance wandering or dispersal, rather than local residence. The White-headed Woodpecker is rare in the Laguna Mountains. Sams and Stott (1959) record the species from this area, but I know of very few definite observations, all of single birds 3–5 km (2–3 miles) northwest of the village of Mount Laguna, as on 6 November 1975 (M. Thornburgh), 27 January 1978 (C. Edwards), and 24 March 1981 (P. Unitt). There is one record of a vagrant outside the mountain zone: one seen at Ramona on 20 November 1955 (AFN 10:58, 1956). Very little is known of the nesting of White-headed Woodpecker in San Diego County. F. Stephens noted a nest containing three young in the Cuyamaca Mountains on 19 June 1893 (from Willett 1912); E. Beemer saw an adult feeding fledglings at Palomar County Park on 15 July 1951.

MAP 41. Breeding Distribution of Hairy Woodpecker (*Dendrocopos villosus*)MAP 42. Breeding Distribution of White-headed Woodpecker (*Dendrocopos albolarvatus*)

MAP 43. Breeding Distribution of Common Flicker (*Colaptes auratus*)

COMMON FLICKER

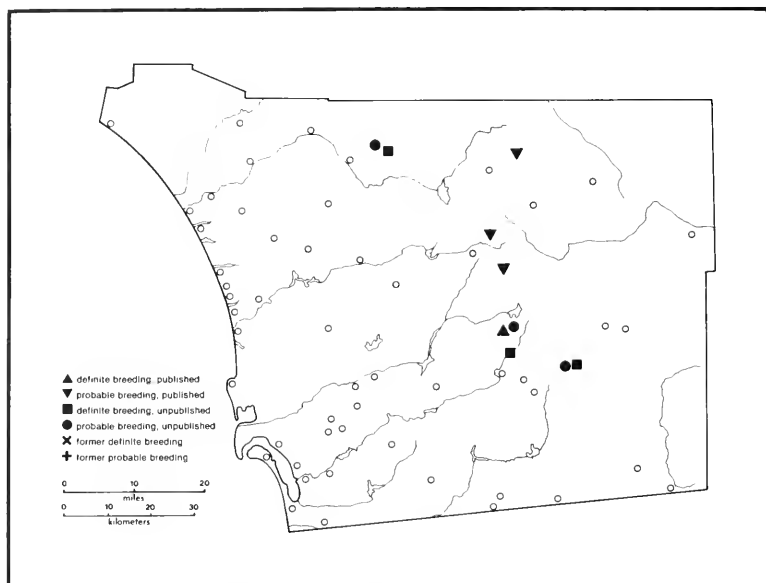
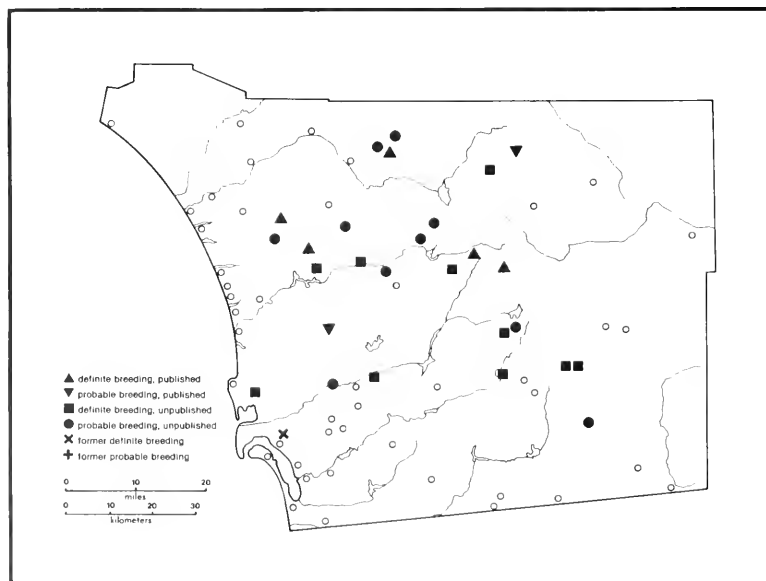
Colaptes auratus (Linnaeus) subsp.

Fairly common migrant and winter visitor, uncommon breeding resident. During migration and winter, flickers may be found in any habitat with trees. They are most numerous in areas of scattered sycamores or oaks, but also frequent denser coniferous or oak woodland, riparian woodland edges, agricultural areas, and parks. The species occurs throughout San Diego County, but is uncommon and localized in the Anza-Borrego Desert. The timing of its migrations is not well understood, since few localities have been visited consistently enough through the year to determine a regular seasonal pattern. In the Tijuana River Valley, where the species is absent during the nesting season, dates of flicker observations extend from 8 October to 11 April (both of single individuals in 1978).

During the breeding season, the birds show a stronger preference for open woodland, and extend down the east side of the mountains only as far as Banner (two on 6 May 1978). Nesting flickers are widespread in the foothills and mountains, more localized in the coastal lowland, where they particularly favor canyon bottoms with sycamores. They occupy other situations as well, such as the park-like campus of Point Loma College on Point Loma (two on 1 June 1977, P. Unitt). Egg dates (33), 9 April – 20 June.

Subspecies: The race that breeds in San Diego County is the red-shafted *C. a. collaris* Vigors. Other forms visit

the county in winter. Most numerous is *C. a. canescens* Brodkorb, which is red-shafted like *collaris*, but is grayer on the back with hardly any brownish wash on the crown and nape. It breeds in the Great Basin and Rocky Mountain regions. Migrant *canescens* may considerably outnumber locally breeding *collaris* in winter; of the 19 flicker skins in SD, all taken between 9 November and 1 April, only one looks like a representative of the coastal race. *Canescens* was not recognized in the A.O.U. Checklist (1957) but Rea (1983) describes its characteristics and specimens in his collection clearly show its differences. Monson and Phillips (1981) also use the name. Yellow-shafted Flickers (*C. a. luteus* Bangs) are rare winter visitors. One specimen (Point Loma, 15 February 1954, SD 30001) shows Yellow-shafted characters in pure form, including gray crown, red nape, black malar stripes, and brown throat. The specimen reported by Huey (1932) from Balboa Park on 4 December 1931 (SD 25615) shows some evidence of intergradation with *canescens*, and five other specimens show a mix of *luteus* and *canescens* characters in different degrees. One collected at Cabrillo National Monument, Point Loma, on 29 October 1971 (SD 37980) is so dark on the back as to indicate that it is a cross between *luteus* and *C. a. cafer* (Gmelin) of the Pacific Northwest. Sight records of Yellow-shafted Flickers extend from 4 October (1973, Point Loma, G. McCaskie) to 4 April (1978, Point Loma, AB 32:1056, 1978).

MAP 44. Breeding Distribution of Olive-sided Flycatcher (*Contopus borealis*)MAP 45. Breeding Distribution of Western Wood Pewee (*Contopus sordidulus*)

Tyrant Flycatchers

Family Tyrannidae

OLIVE-SIDED FLYCATCHER

Contopus borealis (Swainson)

Uncommon migrant and summer resident. Nesting Olive-sided Flycatchers are restricted to mountain-zone woodlands in San Diego County, where they sing and flycatch from the tops of tall conifers. The species seems thinly but evenly distributed through the suitable habitat, having been recorded at Palomar Mountain (30 June 1899, SD 617; many observations, including fledglings, E. Beemer), Hot Springs Mountain (three on 22 July 1980, Unitt 1981), Volcan Mountain (Belding 1890), Julian (15 and 17 June 1915, SD 31919-20), Cuyamaca Mountains (eggs on 5 June 1889, Willett 1912; eggs at Green Valley on 5 June 1921, WF), and Laguna Mountains (four at Agua Dulce Creek on 24 July 1976, P. Unitt; eggs on 4 July 1923, WF). Egg dates (3): 5 June - 4 July.

Migrants occur sparsely among tall trees in the coastal lowland and foothill zones, and there is only one report from the Anza-Borrego Desert (one at 17 Palms Oasis on 26 May 1973, A. Morley). In spring the species occurs usually from late April to late May, with extremes of 6 April (1953, Pauma Valley, E. Beemer) and 7 April (1974, AB 28: 351, 1974) to 5 June (1977, one at Point Loma, P. Unitt) and 9 June (1953, one at Pauma Valley, E. Beemer). A unique observation is of a bird in Balboa Park on 23 June 1974 (J. Dunn). In fall, migrants are encountered even less frequently than in spring, although a maximum of five was noted at Point Loma 22-25 September 1976 (J. Dunn). Almost all reports are from September: dates range from 31 August (1977, one in the Tijuana River Valley, P. Unitt) to 25 October (1972, one at the same locality, G. McCaskie). The report of an Olive-sided Flycatcher at Carlsbad on 10 January 1959 (AFN 13: 324, 1959) should be disregarded, since it is now known that the Coues' Flycatcher is by far the most likely *Contopus* to occur in California in winter.

GREATER PEWEE or COUES' FLYCATCHER

Contopus fumigatus (d'Orbigny and Lafresnaye)

Casual winter visitor. Three sight records: one at Presidio Park 20 January - 25 March 1974 (G. McCaskie and J. Dunn, AB 28:693, 1974), one at Buddy Todd Park, Ocean-side, 3 January - 10 March 1976 (R. Higson), and one at Balboa Park, 9-23 February 1976 (J. Dunn and J. V. Remsen, AB 30:768, 1976).

Subspecies: Presumably *C. f. pertinax* Cabanis and Heine, nesting from central Arizona south in mountains to Guatemala. Monson and Phillips (1981) consider *C. f. pallidiventris* Chapman, the name applied to the northernmost population of the species in the A.O.U. Check-list (1957), a synonym of *pertinax* (= *musicus*).

WESTERN WOOD PEWEE

Contopus sordidulus Sclater subsp.

Fairly common migrant and summer resident. Western Wood Pewees occupy coniferous, oak, or riparian woodland during their breeding season; migrants occur in other habitats with trees as well. Nesting birds are most numerous in the mountain and foothill zones, uncommon and local in the coastal lowland. Egg dates (25), 19 May - 7 July; Sharp (1907) reported eggs at Escondido as early as 10 May. During migration, pewees are fairly common along the coast (16 at Point Loma on 1 June 1977, P. Unitt), and at least in spring, occur on the Anza-Borrego Desert.

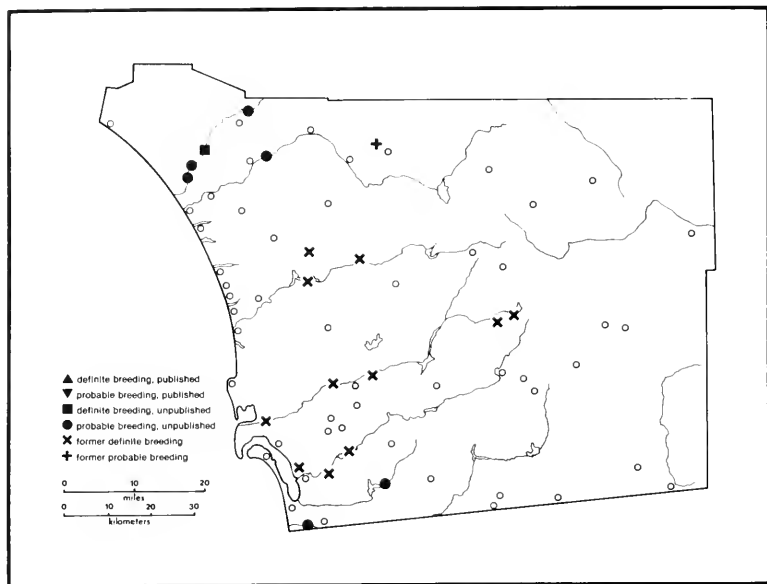
Spring arrival of Western Wood Pewee is usually about 20 April, rarely as early as 10 April (1977, one at Point Loma; 1981, one at Pio Pico Park, G. McCaskie). A bird banded by A. Craig at Point Loma on 4 April 1969 (AFN 23:624, 1969) was exceptional. Spring migration continues well into early June; two at Point Loma on 10 June 1977 is the latest record of undoubted migrants. In fall, migration begins in early August, as indicated by 15 at Old Mission Dam on 11 August 1974, where only two had been on 3 August (P. Unitt). Late departures are in early October, rarely mid-October. The latest specimen date is 4 October 1914, San Diego (SD 31914). The latest observations are 19 October 1970 and 30 October 1971, single birds in the Tijuana River Valley (G. McCaskie). The possibility of Eastern Wood Pewee, not yet identified in San Diego County, must be considered at this time of year.

Subspecies: The birds nesting in San Diego County, as well as most migrants, are *C. s. relici* Coues. A slightly darker form, *C. s. saturatus* Bishop, breeds in the Pacific Northwest and migrates through San Diego County to an undetermined extent. At least two specimens represent *saturatus*: San Luis Rey, 30 May 1962 (AMR 92), and Kitchen Creek above Cibbets Flat, 31 August 1981 (SD 41559).

WILLOW FLYCATCHER

Empidonax traillii (Audubon) subsp.

Uncommon spring and fall migrant, very rare summer resident. Migrant Willow Flycatchers may be found among any trees or large shrubs throughout San Diego County. Nesting birds, however, are restricted to willow thickets in riparian woodland. The local breeding population is now extremely small, probably under 15 pairs. Surveys of most of the riparian woodlands of San Diego County from 1978 to 1981 by Sharon Goldwasser and Larry R. Salata provide information on the present status of Willow Flycatcher. Singing, territorial individuals have been found at only seven localities during the past decade. Four of these are along the Santa Margarita River: 3 km (2 miles) northeast of Fallbrook (two on 2 and 22 June, one on 12 July 1980, S. Goldwasser), 1.2 km (0.75 mile) upstream from Basilone Road (pair from 24 June to 21 July 1981), 2.9 km (1.8 miles) downstream from Basilone Road (one from 26 June to 15 July 1981), and 3.7 km (2.3 miles) upstream from Stuart



MAP 46. Breeding Distribution of Willow Flycatcher (*Empidonax traillii*)

Mesa Road (one on 1 July 1981, L. R. Salata). The other three localities are: along the San Luis Rey River at Gird Road (one from 4 to 25 June 1978, S. Goldwasser), along Jamul Creek where it enters Lower Olay Lake (one on 13 July 1975, AB 29:1033, 1975), and along the Tijuana River east of Dairy Mart Road (one from 2 May to 21 June 1981, E. Copper). L. R. Salata found the nest of the pair 1.2 km above Basilone Road on 10 July 1981 after the young had fledged, and collected one egg which had failed to hatch.

Spring migration of Willow Flycatcher is very late, extending usually from mid-May through early June. Extreme dates are 2 May (1981, cited above) and 13 June (1978, one in the Tijuana River Valley, but not in breeding habitat, S. Goldwasser). Fall migration begins rather early, by early August (4 August 1908, Volcan Mountain, MVZ 3854, possible local breeding bird?; 6 August 1975, one at Old Mission Dam, AB 29:1033, 1975), and continues to early October (latest, 11 October 1914, Bonita, SD 31886). With such a brief interval between spring and fall migration, Willow Flycatchers must be followed carefully through the summer to determine if they are local residents.

Formerly, the species was widespread in the riparian woodlands of the coastal lowland, and bred locally at higher elevations as well. Anthony (1895d) reported "a few *Empidonax pusillus*" (name then used for Willow Flycatcher) nesting at 1130 m (3700 feet) elevation at the base of Cuyamaca Peak. Nine egg sets from Cuyamaca Lake and Doane Valley are preserved in WF. Egg dates (35), 30 May

– 28 June. Brood-parasitism by the exploding population of Brown-headed Cowbirds undoubtedly has been the principal cause of the decline of Willow Flycatchers; widespread destruction of riparian woodlands has probably had a significant impact as well.

Subspecies: Migrant Willow Flycatchers passing through San Diego County are *E. t. brewsteri* Oberholser, and most specimens in SD are of this race. However, two, originally identified by A. R. Phillips, are clearly *E. t. extimus* Phillips, previously reported no farther west than the Colorado River. One was collected at National City on 5 June 1913 (SD 31867), the other at Doane Valley, Palomar Mountain, on 12 June 1945 (SD 19184). *Extimus* is not recognized in the A.O.U. Checklist (1957), but is distinguishable from *brewsteri* by its overall paler coloration, especially on the crown. Its label indicates the bird from National City was incubating, and its eggs are probably those preserved as WF 72201, taken at "Bonita" on 5 June 1913. This strongly suggests that the population of Willow Flycatchers breeding in San Diego County is *extimus*, rather than *brewsteri* as previously listed. *Extimus* probably arrives slightly earlier in the spring than migrant *brewsteri*. The Tijuana River Valley bird which arrived on 2 May 1981 and remained to 21 June was presumably *extimus*, while the earliest date for *brewsteri* is 13 May (1889, Ballena, SD 636). Note that these dates correspond to early dates in Arizona: 3 May for *extimus*, 15 May for *brewsteri* (Phillips et al. 1964).

LEAST FLYCATCHER***Empidonax minimus* (Baird and Baird)**

Very rare fall migrant. Eight records between 10 September and 21 October: Tijuana River Valley, 16 September 1967 (SD 36354), 15–19 October 1975 (AB 30:128, 1976) and 10 September 1980 (AB 35:227, 1981); Border Field State Park, 28–29 September 1975; Otay River mouth, 1 October 1975 (AB 30:128, 1976); and Point Loma, 15 September 1977 (AB 32:259, 1978), 16 September 1979, and 21 October 1979 (AB 34:202, 1980).

HAMMOND'S FLYCATCHER***Empidonax hammondi* (Xantus)**

Uncommon spring and fall migrant; possibly casual in winter. Hammond's Flycatchers occur throughout San Diego County during migrations. For habitat, they use any type of woodland or shrubbery which provides access to low or medium-height airways for foraging, and some degree of cover or shade; this is not an open-country flycatcher.

Spring migration is generally from early April to late May, with extreme dates 27 March (1981, San Diego, AB 35:862, 1981) and 3 June (1977, one at Point Loma, P. Unitt). In fall, migrants arrive at least by early September (9 September 1973, one at San Diego, G. McCaskie), but additional field work in the foothill and mountain regions would probably reveal an arrival date sometime in August. The birds usually depart in mid or late October (one in the Tijuana River Valley 24–25 October 1975, AB 30:128, 1976). An exceptional straggler found at Old Mission Dam on 16 November 1974 was collected the following day (SD 40738).

Empidonax flycatchers other than Western and Gray have been noted on five occasions in winter: in Balboa Park on 20 December 1969 (AFN 24:455, 1970), 5 December 1971 (AB 26:656, 1972), and 6 December 1975 (J. Dunn), in Greenwood Cemetery, San Diego, on 7 December 1974 (G. McCaskie), and in Presidio Park 15 November 1974 – 18 April 1975 (J. Dunn). They were variously identified as Hammond's, Dusky, or "Hammond's/Dusky," but considering present knowledge are best regarded as "Least/Hammond's/Dusky" Flycatchers.

DUSKY FLYCATCHER***Empidonax oberholseri* Phillips**

Rare fall migrant, very rare summer resident. The status of the Dusky Flycatcher in San Diego County is obscurely known because few migrant *Empidonax* specimens have been collected, and the species is difficult to identify positively in the field. The scanty early data are not reliable. Belding (1890) reported "arriving at San Diego April 20, 1884" and "noticed on several occasions at Poway," but does not mention any collected specimens. Stephens (1919a) provided no supporting evidence for his statement "rather common migrants in the foothills and mountains, and breed in small numbers in the higher mountains." The specimen reported

from Point Loma on 9 January 1966 (AFN 20:460, 1966) is actually a Gray Flycatcher (SD 36021).

All four specimens for the county were collected in fall at Point Loma: 24 September 1969 (SD 37592), 25 September 1968 (36931), and 1 and 2 October 1965 (35517 and 35518). A few sight records from the Tijuana River Valley and Point Loma extend this range of dates from 11 September (1975, one at Point Loma) to 12 October (1974, one in the Tijuana River Valley, J. Dunn). No sight identifications in winter or spring can yet be considered positive.

Dusky Flycatchers occur sporadically in summer in the coniferous woodlands of the highest mountains of San Diego County. Known localities are Hot Springs Mountain (one on 3 June 1980, Unitt 1981), Cuyamaca Peak (one on 1 July 1979 and 17 June 1980, AB 33:898, 1979 and 34:931, 1980), Agua Dulce Creek, Laguna Mountains (pair with two young in nest, AB 28:950, 1974; two on 24 July 1976, AB 30:1004, 1976), and Cibbets Flat, Laguna Mountains (pair feeding fledgling cowbird on 4 July 1978, AB 32:1209, 1978).

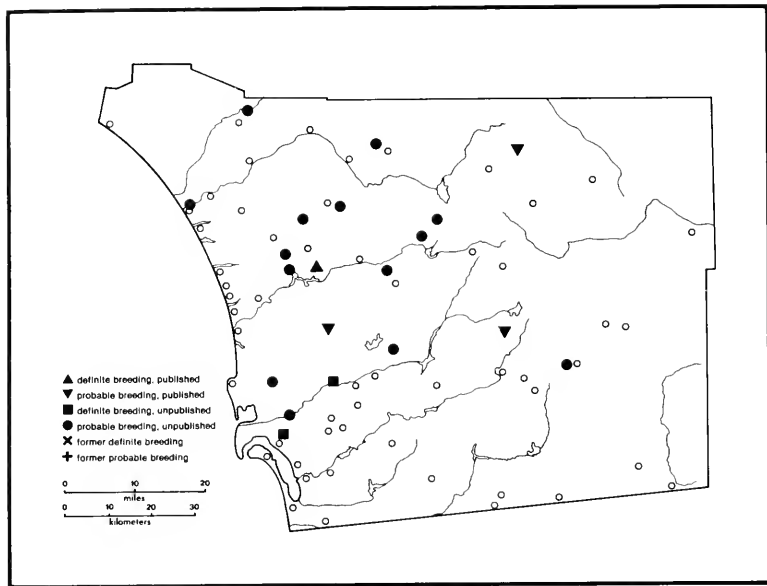
GRAY FLYCATCHER***Empidonax uirightii* Baird**

Rare migrant and winter visitor. During fall and winter, Gray Flycatchers have been found only in the coastal lowland, in situations similar to those frequented by other migrant *Empidonax*. In spring, the species has been noted a few times on the east side of the mountains, as well as along the coast (one at Yaqui Well on 3 March 1975, AB 29:743, 1975; one at Banner on 6 May 1976, B. Cord). Two specimens are preserved: San Marcos, 19 April 1930 (SD 14454), and Point Loma, 9 January 1966 (SD 36021).

Gray Flycatchers are noted most frequently in fall migration, with the earliest reports in early September: 4 September 1973 (J. Dunn) and 10 September 1977 (P. Unitt), both at Point Loma. Occasional individuals remain through the winter, usually in riparian woodland or parks, such as one at Bonita 14 February – 2 March 1969 (AFN 23:522, 1969) and one in the Tijuana River Valley 6 December 1969 – 21 March 1970 (AFN 24:540, 1970). In spring, the species occurs to early May, exceptionally later: 11 May 1979, Point Loma (AB 33:806, 1979); 25 May 1968, same locality (AFN 22:576, 1968).

WESTERN FLYCATCHER***Empidonax difficilis* Baird subsp.**

Fairly common fall migrant, rare winter visitor, fairly common to common spring migrant, uncommon summer resident. The Western Flycatcher is the most numerous *Empidonax* in San Diego County at any time of year. Migrants may be seen in all woodland habitats, parks, residential areas, and taller chaparral. In fall, the species is widespread in the county, with migrants arriving by mid-August (13 August 1978, one in the Tijuana River Valley, P. Unitt; 16 August 1964, one in the same area, G.

MAP 47. Breeding Distribution of Western Flycatcher (*Empidonax difficilis*)

McCaskie). Numbers are highest in mid and late September, and decline during October. Migrants may be seen rarely as late as mid-November (12 November 1972, one at Point Loma, G. McCaskie). Occasionally Western Flycatchers linger into early winter in riparian woodland or parks in the coastal lowland. Probably few remain or survive the entire winter, however, since there are several reports for December, but only three as late as February: one at Old Mission Dam on 10 February 1974, one at Presidio Park 24 January – 18 February 1974 (AB 28:693, 1974), and one at Kit Carson Park 28 December 1979 – 3 March 1980 (AB 34: 307, 1980).

Western Flycatchers are most abundant during spring migration. The largest numbers move through the coastal lowland (30 in the Tijuana River Valley on 23 March 1963, G. McCaskie) and Anza-Borrego Desert (30 at Palm Spring on 2 April 1978, P. Unitt). The first birds arrive in mid-March; 12 March (1974, San Diego area, AB 28:851, 1974) is the earliest date. A few birds are still migrating as late as early June, and exceptional individuals, even later (Point Loma, 15 and 23 June 1977, P. Unitt).

The breeding distribution of the Western Flycatcher in San Diego County is still poorly understood. The species has been found in midsummer in riparian, oak, and coniferous woodlands near streams, but it occupies only a fraction of the seemingly suitable habitat. No egg sets are preserved at WF, and only two literature sources report definite summer localities. Blaisdell (in Belding 1890) called

the Western Flycatcher "a summer resident" at Poway, and Anthony (1895d) reported it "rather common" between 1220 and 1830 m (4000 and 6000 ft.) elevation "in the pine growth" on Cuyamaca Peak in late June 1895. Specimens taken at Julian on 31 July and 1 August 1908 (MVZ 3816–7) and on Volcan Mt. on 4 and 6 August 1908 (MVZ 3852–3) may represent local breeding birds rather than early migrants. Possibly the species' population has increased in recent years, yet it seems strange that the Western should increase while the Willow Flycatcher is declining. A comparative study of the ecology of the two species would be worthwhile. Recent localities of probable nesting are scattered throughout the coastal slope. Examples are the Santa Margarita River 3 km (2 miles) northeast of Fallbrook (one on 12 June 1978), San Clemente Canyon (two on 30 June 1978, S. Goldwasser), Old Mission Dam (many observations, including three specimens collected on 13 June 1979, SD 40968–70), Balboa Park (juvenile picked up dead on 21 July 1981, SD 41598), Harmony Grove (three on 15 June 1979), Mesa Grande (one on 20 June 1980, K. Weaver), Hot Springs Mountain (three on 3 and 24 June 1980), and Agua Dulce Creek, Laguna Mountains (two on 14 June 1977, one on 25 June 1978, P. Unitt). K. Weaver observed an adult feeding two fledglings at Kit Carson Park on 1 June 1980. This indicates that local breeding birds have already completed their nesting cycle when migrants, which have not yet reached their breeding grounds, are still passing through!

Subspecies: Brodkorb (1949) discussed geographical variation in the Western Flycatcher. The race which migrates commonly through San Diego County is *E. d. difficilis* Baird. One specimen (Jamacha, 29 March 1924, SD 2838) may represent the race *E. d. insulicola* Oberholser, supposed to breed only on the Channel Islands, and was so identified by A. R. Phillips. It is a male with a rather gray back and tail measuring 60.5 mm, near the long extreme for *difficilis* but about average for *insulicola*. A few other specimens may represent intergrades between *difficilis* and *insulicola*. One immature male at Point Loma on 17 September 1965 (SD 35441) is probably a vagrant *E. d. hellmayri* Brodkorb from the Great Basin and Rocky Mountain region. Its tail measures 61.0 mm, just above the largest value recorded for *difficilis*.

The subspecific relationships of the population breeding in San Diego County are not positively known. Brodkorb (1949) included southern California within the breeding range of *E. d. difficilis*. However, the three specimens from Old Mission Dam and the juvenal from Balboa Park are very pale and drab, approaching *E. d. cineritius* Brewster in color, especially of the underparts, but not in length of bill. *Cineritius* breeds in Baja California in the Sierra San Pedro Martir and mountains of the Cape district. Two other drab specimens in SD may also represent the local breeding population, but are so ancient and badly foxed as to make color comparisons difficult. Anthony (1895d) reported his late June specimens from Cuyamaca Peak as *Empidonax cineritius*. The systematics of the Western Flycatchers of southern and Baja California need more attention since there are probably contacts and intergradations among *difficilis*, *insulicola*, and *cineritius* which have not been adequately studied.

EASTERN PHOEBE

Sayornis phoebe (Latham)

Very rare fall migrant and winter visitor. Eastern Phoebes visit the same habitats as do Black Phoebes, primarily trees and low, damp vegetation near ponds and lake shores. Migrant birds (individuals which did not remain through the winter) have been found also in scattered trees in parks and agricultural areas. Most of the 17 reports of Eastern Phoebe are from the coastal lowland. Recorded localities in this area are Whalen Lake (22 December 1979 – 1 March 1980, AB 34: 307, 1980), San Elijo Lagoon (5 December 1976 – 6 February 1977, AB 31: 374, 1977), Lake Hodges (27 November 1978 – 10 March 1979, AB 33: 315, 1979), Santee Lakes (two consecutive winters, 1976 and 1977, probably one individual returning), Point Loma (three times), Presidio Park (15 December 1979, AB 34: 307, 1980), Silver Strand State Park (16–17 October 1962, McCaskie et al. 1967a), Sweetwater Reservoir (twice), Otay Mesa (24 November 1979 – 2 February 1980, AB 34:202 and 307, 1980), and Tijuana River Valley (twice). Three reports are from the foothill zone, two from Lake Henshaw (26 October – 26 December 1949, Beemer 1950; 6 February – 14 March

1979, AB 33: 315 and 806, 1979), and one from Mesa Grande (26 February 1974, AB 28:693, 1974). All records are of single individuals.

Migrating birds have been noted from 16 October (1962, Silver Strand, cited above) to 15 December (1979, Presidio Park, cited above). Wintering individuals have remained as late as 10 March (1979, Lake Hodges, cited above). No specimen has yet been collected in the county.

BLACK PHOEBE

Sayornis nigricans semiatra (Vigors)

Fairly common resident. Black Phoebes are characteristically associated with water, and visit fresh water marshes, riparian woodland, lake shores, ponds, ditches, and even irrigated lawns. For nesting, they require sheltered situations, often provided by small bridges or buildings, near these habitats. The breeding range of Black Phoebe covers the entire coastal slope from sea level up to 1400 m (4600 feet) at Cuyamaca Lake, possibly higher on Cuyamaca Mountain (WF), and east probably to Jacumba (one on 10 April 1976, G. McCaskie). Egg dates (65), 17 March – 11 June; Sharp (1907) found eggs at Escondido as late as 16 June. The species is probably only a rare migrant or visitor to most of the Anza-Borrego Desert, but there is little information from this area. It does nest in the Coyote Creek region, however: A. Morley saw a fledgling at Salvador Canyon on 18 May 1981.

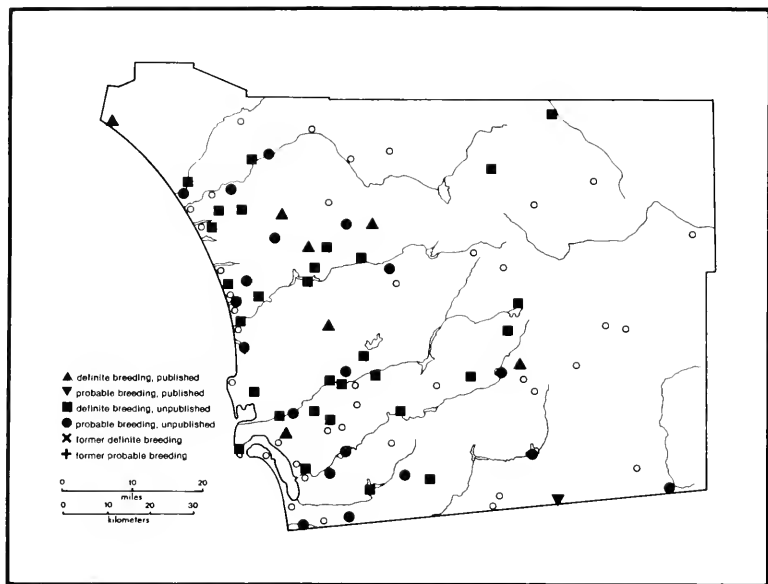
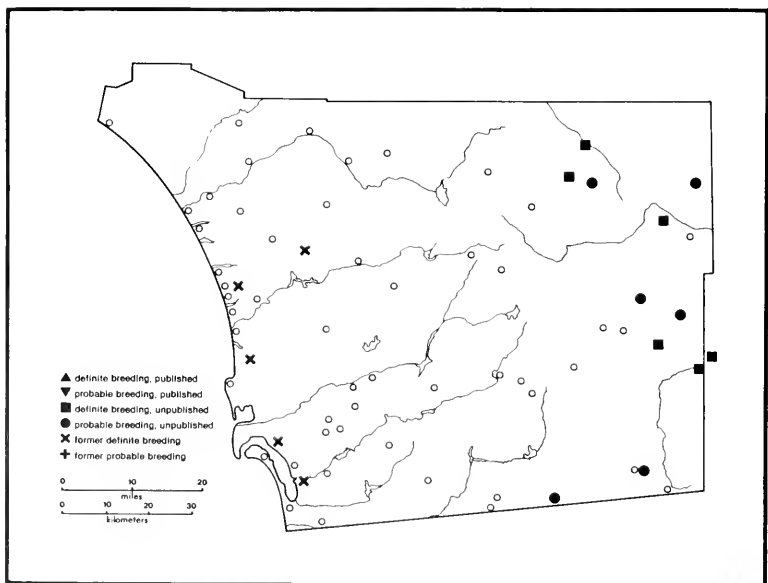
Black Phoebes occur in San Diego County throughout the year, but are definitely not sedentary. The largest numbers are found along the coast from late summer to early winter, such as 12 in the Tijuana River Valley on 16 August 1977, and 15 in the San Luis Rey River Valley, Oceanside, on 31 December 1977 (P. Unitt). Very little is known about the species' migration or dispersal, however.

SAY'S PHOEBE

Sayornis saya (Bonaparte) subspp.

Fairly common winter visitor on the coastal slope, fairly common breeding resident in the Anza Borrego Desert. Say's Phoebes are found in open agricultural country, grassland, sparse chaparral, and desert scrub. During migration and winter they disperse throughout the county, excluding the mountain zone. The first birds arrive in fall usually in mid-September, occasionally earlier (23 August 1941 and 2 September 1944 at Pauma Valley, E. Beemer). Spring departure from the coastal lowland is completed in mid-March: 16 March (1974, Agua Hedionda Lagoon, P. Unitt) and 24 March (1946, Pauma Valley, E. Beemer) are late dates for winter visitors in this area.

In the Anza-Borrego Desert, Say's Phoebes occur throughout the year, and nest on buildings, on ledges, or in crevices of bluffs in creosote bush scrub. Egg dates for this area (2): 14 March – 5 April. M. Evans noted a nest with young in Hawk Canyon on 17 March 1968, while J. Morley found a nest in Coyote Creek Canyon at Foot Wash on 27 April 1978. D. Povey saw a fledgling at Palm Spring

MAP 48. Breeding Distribution of Black Phoebe (*Sayornis nigricans*)MAP 49. Breeding Distribution of Say's Phoebe (*Sayornis saya*)

on 24 May 1978. Observations of single birds at Campo on 21 April 1977 and 2.4 km (1.5 miles) east of Boulevard on 26 June 1978 (P. Unitt) suggest the species' breeding range may extend west into the foothill zone in southern San Diego County.

The Say's Phoebe was formerly an uncommon or rare breeding bird in the coastal lowland, but there is only one recent report from this area (one in the Tijuana River Valley on 9 June 1979, AB 33:898, 1979). Belding (1890) noted "one or two pairs nesting in April 1885" at San Diego, and Sharp (1907) reported a nest with eggs at Escondido on 22 April 1906. Six egg sets from the coastal lowland are preserved at WF: one from Chula Vista on 13 May 1888, one from Sorrento on 21 March 1935, and four taken 3–6 km (2–4 miles) east of Encinitas, 30 March – 23 May 1931–1939.

Subspecies: The common race in winter is *S. s. saya* (S. s. *gukonensis* Bishop is a synonym, *vide* Browning 1976). Gabrielson (1934) reported a specimen collected near Chula Vista on 22 October 1933 as *S. s. quiescens* Grinnell. One from La Puerta (= Mason) Valley on 15 January 1925 (SD 2915) also represents this paler race. As a breeding bird, *quiescens* is supposedly restricted to Baja California, but no specimens of the San Diego County breeding population have been collected. The local breeding birds could be either *saya* or *quiescens*.

VERMILION FLYCATCHER

Pyrocephalus rubinus flammeus van Rossem

Rare fall migrant and winter visitor, casual spring migrant and summer resident. Vermilion Flycatchers are noted most frequently in agricultural areas and parks, usually near ponds or rivers. All reports for fall and winter are from the coastal lowland. Maximum numbers for typical localities are: two at Whalen Lake on 22 December 1979, two at Santee Lakes on 30 December 1976, four at Bonita on 25 December 1966, and three in the Tijuana River Valley on 30 October 1971 (G. McCaskie). Dates for non-breeding Vermilion Flycatchers in the coastal lowland extend from 28 September (1973, one at Otay Mesa, J. Dunn; 1978, one in the Tijuana River Valley, P. Unitt) to 9 March (1957, one in Mission Valley, AFN 11:291, 1957), exceptionally 6 April (1902, one about 16 km [10 miles] inland along the lower San Luis Rey River, Carpenter 1902). The four reports from points farther inland (one at Campo on 7 March 1959, AFN 13: 324, 1959; one at Vallecito on 25 March 1973, AB 27:664, 1973; one in Grapevine Canyon and another in Borrego Palm Canyon in March 1967, ABDSP file) may represent spring wanderers that did not winter locally.

The species has been recorded in late spring or summer at four localities, with breeding noted at three of these. Crouch (1959) observed a pair building a nest at Santee on 18 February 1958, and laying three eggs 4–6 March. After two failures, three juvenals fledged 18–19 May, and

another clutch was laid by 9 June. In Balboa Park, Crouch reported a pair raising two broods also in spring 1958. Nest-building was noted again in February and March 1959 (AFN 13: 324, 1959), and a remarkable total of 24 young was reported as fledging in Balboa Park in 1960 (AFN 14:478, 1960). The colony evidently ceased to exist soon after this, however, as there have been no subsequent reports. A pair was seen feeding three young at Bonita on 19 May 1968 (G. McCaskie), and a single female was in Mission Valley on 8 June 1967 (AFN 21:605, 1967).

ASH-THROATED FLYCATCHER

Myiarchus cinerascens cinerascens (Lawrence)

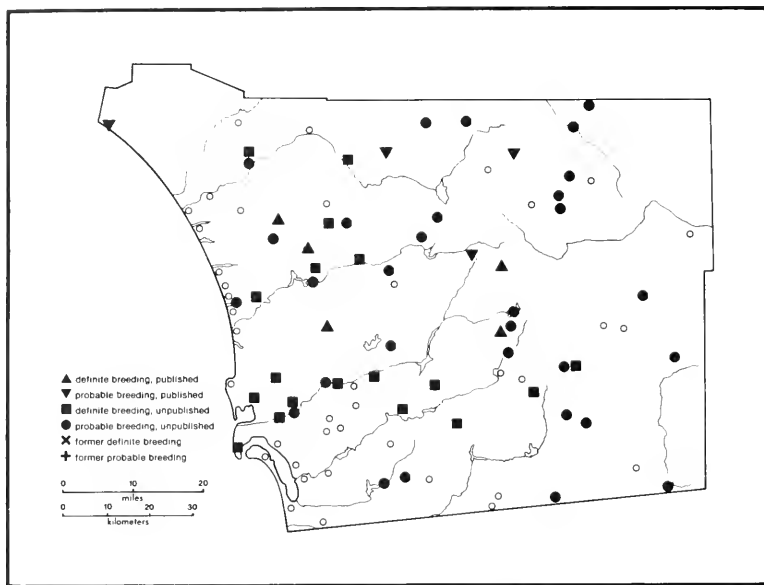
Uncommon to fairly common summer resident and migrant, very rare in winter. Ash-throated Flycatchers occupy broken woodland or areas of scattered trees. Their occurrence seems governed by the structure and dispersal of plants in a habitat, rather than by the particular species involved. Ash-throated Flycatchers are found in riparian woodland, sycamore groves, oaks or conifers, where these are mixed with chaparral or grass, or around the edges of these stands of trees. During migration, the species is very widespread and occurs in many locations where it does not nest. Ash-throated Flycatcher has a wide breeding range in San Diego County, and is absent only from urban areas or treeless expanses of chaparral, grassland, or desert scrub.

Nesting localities range from Bonsall, Rancho Santa Fe, San Clemente Canyon, Rose Canyon, (WF) and Point Loma (four fledglings on 31 July 1981, C. Edwards) east through the inland valleys, foothills, and mountains up to Cuyamaca Peak and Mount Laguna (WF). Little information is available from the Anza-Borrego Desert in summer, but the observations of six in Coyote Creek Canyon on 1 July 1978 (S. Goldwasser) and several at scattered localities in late May and June 1973 (A. Morley) suggest the species breeds in that area as well.

Egg dates (38), 6 May – 27 June. Willett (1933) reported that E. E. Sechrist collected eggs near San Diego as early as 1 May. Most dates are for late May through mid-June.

Spring migration extends usually from early April to about the first of June; extreme dates are 23 March (1978, Borrego Valley, AB 32:1053, 1978) and 6 June (1974, two at Point Loma, J. Dunn). In fall, migration begins by early August, and most birds move through from mid-August through September. The species is rare by mid-October, with late dates of 31 October (1976) and 24 November (1963 and 1979, in the Tijuana River Valley on all three occasions, G. McCaskie; AB 34:202, 1980).

Ash-throated Flycatchers have been reported on nine occasions in winter: Anza-Borrego Desert State Park, 5–6 January 1956 (AFN 10:284, 1956), Escondido, January 1958 (AFN 12: 307, 1958), San Diego Christmas Bird Counts, 2 January 1961 and 21 December 1963 (AFN 15:288, 1961 and 18: 317, 1964), Borrego Springs, 23 February 1970 (AFN 24:540, 1970), Sweetwater Reservoir,



MAP 50. Breeding Distribution of Ash-throated Flycatcher (*Myiarchus cinerascens*)

6 February 1977 (AB 31: 374, 1977), Bonita, 16 December 1978 (L. Santaella), Sweetwater River in National City, 15 December 1979 and 3 February 1980 (AB 34: 307, 1980), and Otay River Valley, 17 January 1981 (AB 35: 336, 1981).

GREAT CRESTED FLYCATCHER

Myiarchus crinitus (Linnaeus)

Casual fall vagrant. Three sight records, all for Point Loma: 20 October 1974 (G. McCaskie, AB 29:122, 1975), 19 September 1975 (G. McCaskie, AB 30:128, 1976), and 6 October 1978 (E. Copper and P. Unitt, AB 33:216, 1979).

SULPHUR-BELLIED FLYCATCHER

Myiodynastes luteiventris Sclater

Accidental. One was seen at Point Loma on 7 October 1979 (C. Carpenter, E. Copper, G. McCaskie and others; AB 34:202, 1980).

TROPICAL KINGBIRD

Tyrannus melancholicus satrapa (Cabanis and Heine)

Rare fall visitor, casual in early winter, one late winter record. Tropical Kingbirds are found in open areas such as agricultural land, parks with scattered trees, and lagoon margins, the same habitats frequented by other kingbirds in migration. The species is almost always encountered within 3 to 5 km (2 or 3 miles) of the coast. Rancho Santa Fe (one on 16 November 1974, AFN 19:80, 1965) and Otay

Mesa (several occasions, such as one on 11 October 1975, J. Dunn) are the farthest inland recorded localities. Tropical Kingbirds are most often reported from the Tijuana River Valley, but have been noted at many other coastal localities: Carlsbad, Solana Beach, Los Peñasquitos Lagoon, Point Loma, and several spots around San Diego Bay. Several individuals are reported in most years, and it is not exceptional for two or three to be found together. The maximum for a single day is seven in the Tijuana River Valley on 8 October 1966 (AFN 21:78, 1967).

The earliest known date for Tropical Kingbird is 12 September (1962, one at Coronado, McCaskie and Banks 1964). The species is most numerous from late September through mid-October. It declines through November, and there are only three records as late as December: one at Solana Beach on 5 December 1965, one in the Tijuana River Valley on 11 December 1965 (AFN 20:460, 1966), and one at Bonita on 15 December 1968 (AFN 23:522, 1969). The exceptional late winter record is of an individual seen at Coronado Cays on the Silver Strand on 2 March 1974 (AB 28:693, 1974).

Subspecies: Traylor (1979) and Monson and Phillips (1981) considered *T. m. occidentalis* Hartert and Goodson a synonym of *T. m. satrapa*. *T. m. satrapa* so defined breeds from southeastern Arizona south to northern South America, and annually reaches many places on the California coast as a fall vagrant.

COLOR PLATES





PLATE I. Green Heron (*Ardeola striata*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY



PLATE II. Snowy Plover (*Charadrius alexandrinus*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY



Brooks.

PLATE III. Elegant Tern (*Sterna elegans*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY



PLATE IV. Band-tailed Pigeon (*Columba fasciata*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY



PLATE V. Poor-will (*Phalaenoptilus nuttallii*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY



Allen Brooks

PLATE VI. Anna's Hummingbird (*Archilochus anna*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY

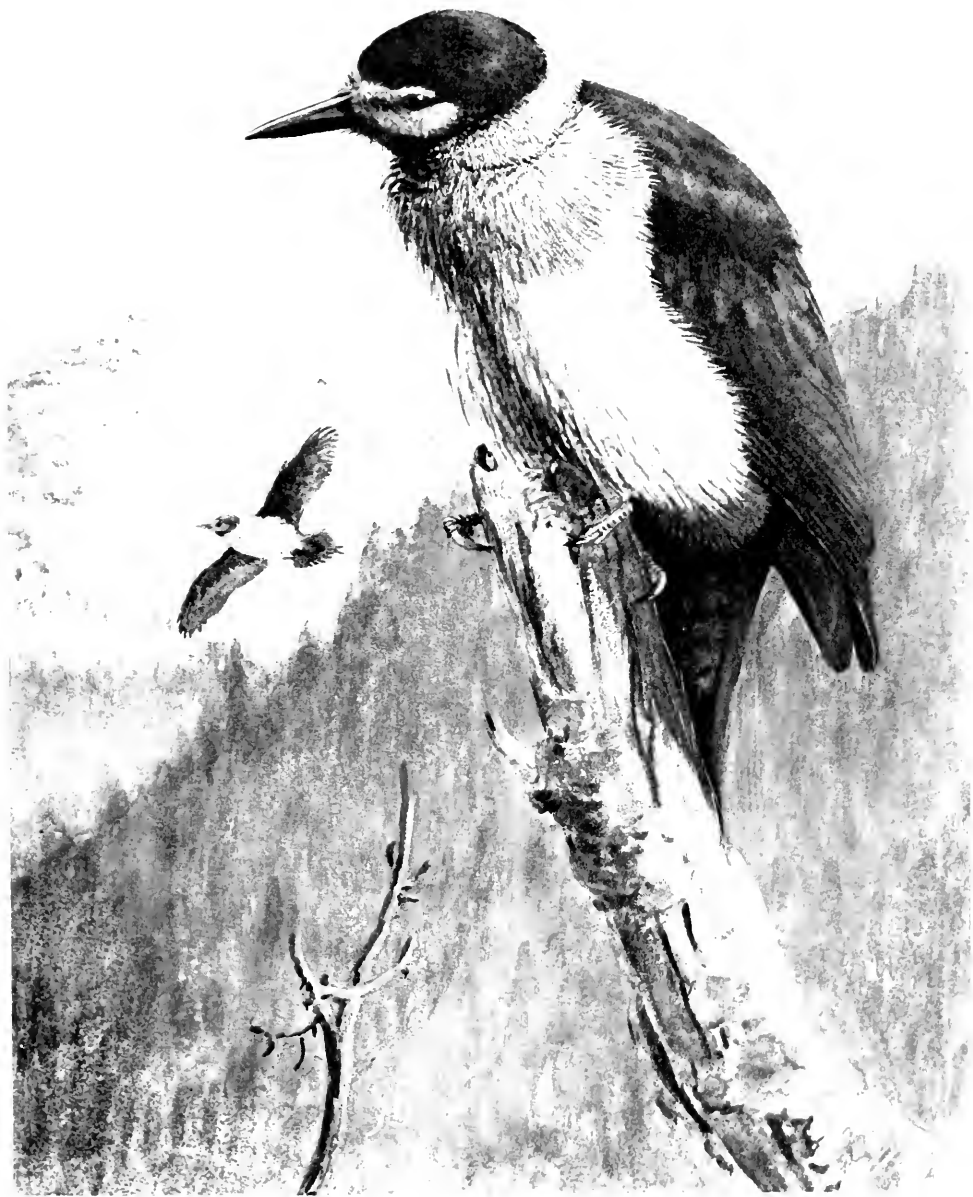


PLATE VII. Lewis' Woodpecker (*Melanerpes lewis*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY



PLATE VIII. Say's Phoebe (*Sayornis saya*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY



PLATE IX. Scrub Jay (*Aphelocoma coerulescens*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY

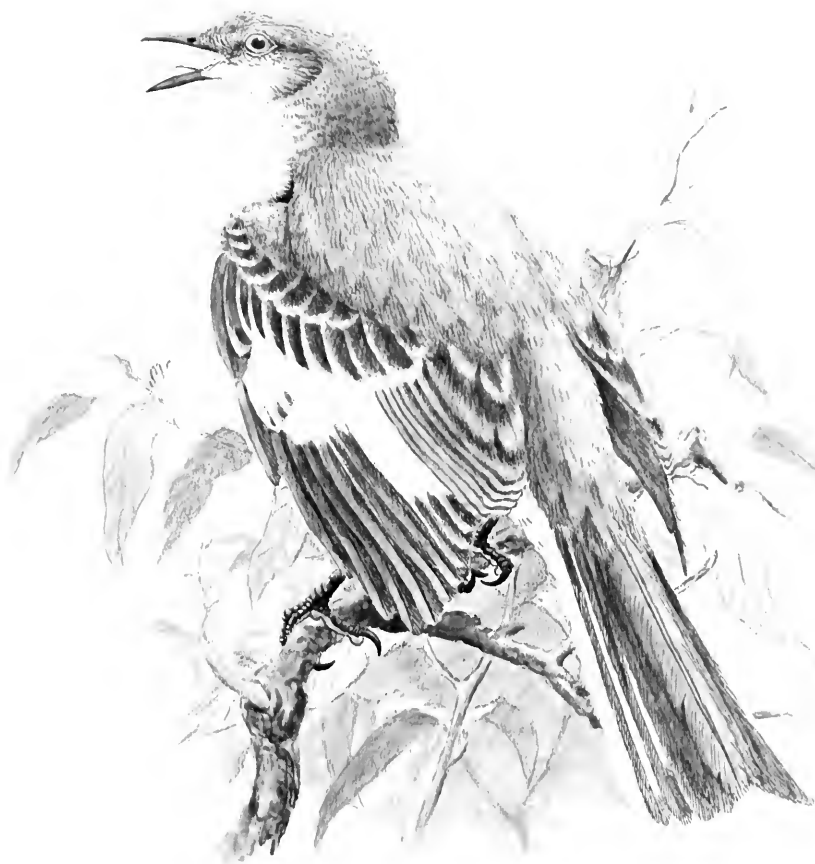


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PLATE X. Hutton's Vireo (*Vireo huttoni*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY



Allan Brooks.

PLATE XI. Northern Mockingbird (*Mimus polyglottos*)

Water color by Allan Brooks

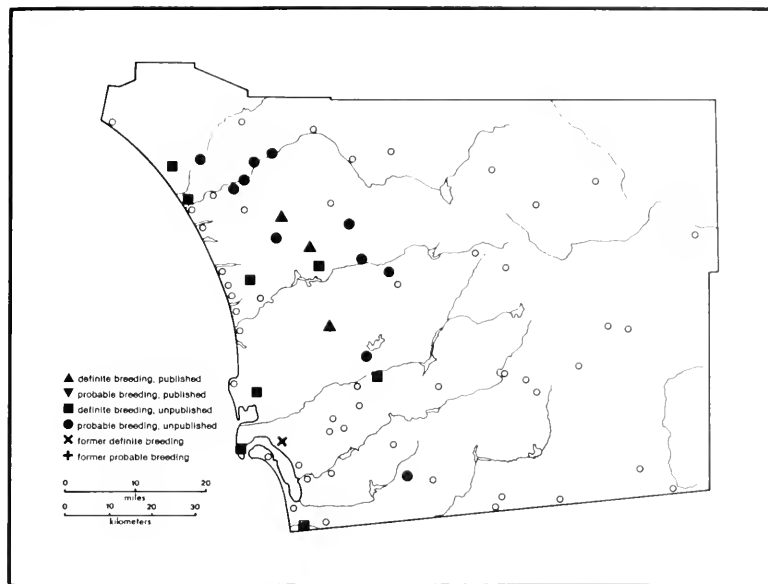
THE BIRDS OF SAN DIEGO COUNTY



PLATE XII. Nashville Warbler (*Termiwa ruficapilla*)

Water color by Allan Brooks

THE BIRDS OF SAN DIEGO COUNTY



MAP 51. Breeding Distribution of Cassin's Kingbird (*Tyrannus vociferans*)

CASSIN'S KINGBIRD

Tyrannus vociferans vociferans Swainson

Uncommon resident and a fairly common fall migrant, occurring in habitats similar to those occupied by Western Kingbirds: open grassland or agricultural land with scattered trees. Cassin's are essentially restricted to the coastal lowland. The only records outside this area are of two birds collected at Santa Ysabel on 10 March 1890 and 10 March 1892 (SD 589, 590). Possibly these birds were spring migrants rather than breeding locally. Cassin's Kingbirds may be found in small numbers in suitable habitat throughout the year, but the species is definitely not sedentary. In fall, the birds are migrating at least from late July through mid-October, when often 10-15 individuals may be seen in a day. An exceptionally large concentration was 25 in the Tijuana River Valley on 21 August 1977 (P. Unitt). The species is less common and more localized during winter, but numbers as large as 15 at Carlsbad on 9 December 1961 (G. McCaskie) and 26 near Escondido on 31 December 1958 (AFN 13: 324, 1959) have been noted. A regular spring migration of Cassin's Kingbirds has not yet been reported, but 15 in the Tijuana River Valley on 2 March 1963 (G. McCaskie) were probably migrants, since the species usually does not remain in that area through the winter. Egg dates (8), 4 May - 15 June. Cooper (1870) "found them breeding at San Diego as early as March 28th," and Merriam (1896) found a nest in a sycamore on

28 April 1889 in Twin Oaks Valley. Sharp (1907) reported eggs at Escondido on 27 June, and I saw an adult feeding a fledgling near the Santa Margarita River mouth on 18 August 1978.

THICK-BILLED KINGBIRD

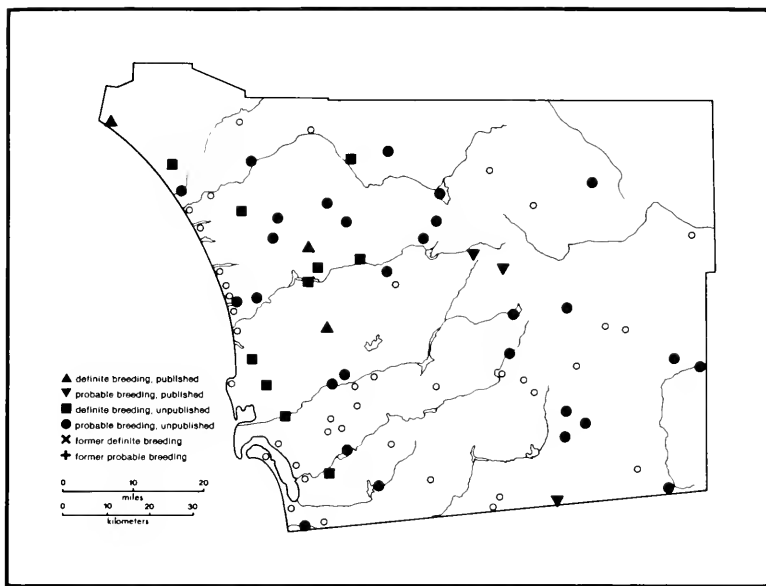
Tyrannus crassirostris Swainson

Casual visitor in late fall and early winter. Four records: one seen in the Tijuana River Valley on 19 October 1965 (McCaskie et al. 1967a), one seen at Point Loma on 3 December 1966 (AFN 21:78, 1967), one photographed at Bonita 26-27 December 1966 (AFN 21:459, 1967), and one seen at Point Loma 18-23 October 1967 (AFN 22:90, 1968).

WESTERN KINGBIRD

Tyrannus verticalis Say

Fairly common migrant and summer visitor, accidental in winter. The Western Kingbird is a bird of open country, occurring in grassland, agricultural land, and desert scrub. Migrating birds may be seen flying over other habitats such as chaparral and residential areas. For nesting the birds require scattered trees. A sycamore grove adjacent to grassland is ideal habitat for Western Kingbirds. The species occurs, and undoubtedly breeds, in suitable habitat throughout San Diego County, including the mountain zone (Palomar Mountain, 15 September 1950 and 25 May 1976,

MAP 52. Breeding Distribution of Western Kingbird (*Tyrannus verticalis*)

E. Beemer; four at Cuyamaca Lake on 6 May 1978, P. Unitt) and the Anza-Borrego Desert (20 in the Borrego Valley on 9 April 1978; eight at Carrizo Marsh on 6 May 1978, P. Unitt; Bow Willow Ranger Station in July 1974, ABDSP file). Western Kingbirds are most abundant in spring migration, when up to 20–25 have been seen in a day at one locality (Tijuana River Valley, 23 March 1969, G. McCaskie; Pauma Valley, 11 April 1937, E. Beemer). Spring migration extends usually from late March through early May; 9 March (1976, one at San Marcos, AB 30:886, 1976) is the earliest date. In fall, migrants are seen from early or mid-August through late September or early October, rarely to late October. The latest dates are 30 October (1971) and 3 November (1963, single birds in the Tijuana River Valley on both dates). The unique winter observation is of an individual at Oceanside on 28 January 1962 (G. McCaskie). The report of two near San Diego on 21 December 1958 (AFN 13: 324, 1959) is probably a misidentification; “2 March” of AFN 17: 359, 1963 is an error for 23 March.

Egg dates (14), 10 May – 4 June, with an exceptionally early set collected on 8 April 1930 in San Clemente Canyon (WF 29332). Sharp (1907) recorded eggs from 5 May to 3 July at Escondido.

EASTERN KINGBIRD

Tyrannus tyrannus (Linnaeus)

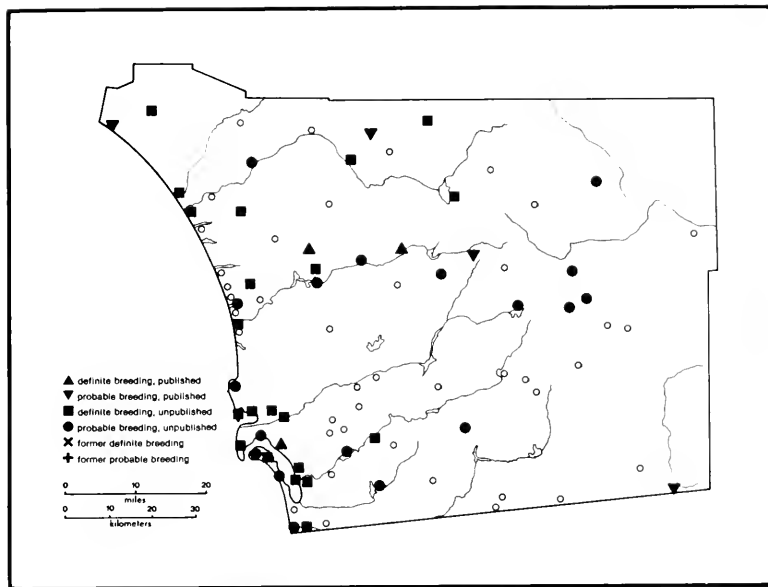
Very rare fall migrant. Most of the 16 Eastern Kingbirds recorded in San Diego County have been found in

agricultural areas; others were in trees scattered in park-like situations or around the margins of lagoons. Half of the reports are from the Tijuana River Valley. Other recorded localities are Carlsbad (one on 29 August 1961), Solana Beach (three records, including a specimen on 28 September 1963; SD 30767, McCaskie et al. 1967a), Point Loma (one on 1 October 1967, AFN 22:90, 1968; one on 11 September 1979, AB 32:259, 1978), and Kit Carson Park, Escondido (one on 22 September 1979, AB 34:202, 1980). The only report outside the coastal lowland is from Vallecito in the Anza-Borrego Desert (one on 17 October 1978, AB 33:216, 1979). All records are of single individuals, though Eastern Kingbirds have often occurred in areas where migrant Western and Cassin's Kingbirds are numerous. Only one or two Eastern Kingbirds have been noted yet in any single year, and the species was not reported at all during 1968–1970 and 1974–1976. Most records are for the period 13 August (1978, Tijuana River Valley, AB 33:216, 1979) through 3 October (1965, same locality, AFN 20:92, 1966). Exceptional were an early individual in the Tijuana River Valley on 15 July 1972 (AB 26:907, 1972) and a late one at Vallecito on 17 October 1978 cited above.

SCISSOR-TAILED FLYCATCHER

Tyrannus forficatus (Gmelin)

Casual fall migrant, accidental winter visitor. The eight fall records cover the period 21 September – 24 November.



MAP 53. Breeding distribution of Horned Lark, *Eremophila alpestris*

Two are for San Elijo Lagoon (22 November 1963, SD 30769, McCaskie et al. 1967a; 8–10 November 1974, AB 29:122, 1975), one for La Jolla (24 November 1933, Grinnell and Miller 1944), and five for the Tijuana River Valley (21–23 September 1967, AFN 22:90, 1968; 16 October 1968, AFN 23:109, 1969; 3–6 November 1971, AB 26:122, 1972; 17 October 1974, AB 29:122, 1975; and 27 October 1978, AB 33:216, 1979). The single winter record is of a bird seen in the Tijuana River Valley 22 February – 3 April 1965 (McCaskie et al. 1967a).

Larks

Family *Alaudidae*

HORNED LARK

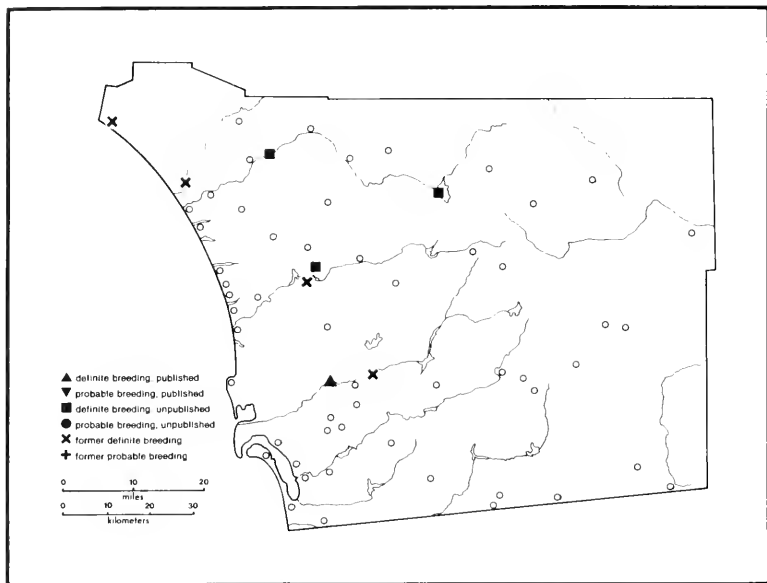
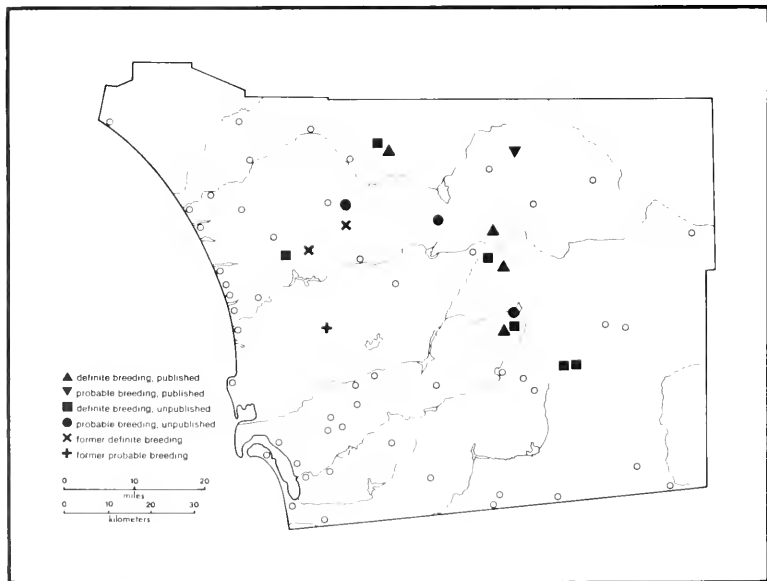
Eremophila alpestris (Linnaeus) subsp.

Common breeding resident, abundant migrant and winter visitor. Horned Larks are found on sandy ocean or bay shores, on bare ground or among low herbaceous plants, on mesas or in disturbed areas, in grassland, in open agricultural land, and in sparse creosote brush scrub. They occur in these habitats throughout the county, from many places on the coast up to Lake Cuyamaca (25 on 25 June 1978, G. McCaskie) and in the Anza-Borrego Desert (29 April 1896, "below Borrego Spring," SD 670; 15 at Vallecito on 5 November 1978). Typical numbers for spring and summer at some representative localities on the coastal slope

are 40 at Fiesta Island, Mission Bay, on 31 March and 7 April 1978, 15 at the Santa Margarita River mouth on 28 June 1977, and 50 at Lake Henshaw on 29 July 1978 (P. Unitt). Egg dates (41): 5 April – 16 June; Sharp (1907) reported 20 June.

Little is yet known about the migration of Horned Lark in San Diego County, but by late September, much larger numbers may be seen (500 in the Tijuana River Valley 27–28 September 1975, G. McCaskie). The peak of abundance seems to be in November, but large flocks occur at least to mid-February (750 in the Tijuana River Valley on 28 January 1978; 150 at the U. S. Naval Communication Station [Coronado Heights] on 12 February 1978, P. Unitt). The extent to which these numbers reflect migration in and out of San Diego County as opposed to concentrations of local breeders is not known.

Subspecies: On the coastal slope, both the nesting population and most migrants are *E. a. actia* (Oberholser). Localities for this subspecies extend east to Montezuma Valley, La Puerta (=Mason) Valley, and Jacumba (SD, Oberholser 1902, Behle 1942). Horned Larks occurring in the Anza-Borrego are conspicuously paler than *actia* and presumably represent *E. a. leucansiptila* (Oberholser), the breeding race of the Colorado Desert. The specimen from Borrego Springs is either *leucansiptila* or *ammophila*. *E. a. leucansiptila* may occasionally wander west. Behle (1942) reported a male *leucansiptila* specimen which had been breeding with a female *actia* at Pamo Valley near Ramona

MAP 54. Breeding Distribution of Tree Swallow (*Tachycineta bicolor*)MAP 55. Breeding Distribution of Violet-green Swallow (*Tachycineta thalassina*)

on 21 April 1934, and two *leucansiptila* collected with *actia* at Jacumba on 17 March 1921. *E. a. ammophila* Oberholser is the Horned Lark breeding in the Mojave Desert, and it probably reaches eastern San Diego County as a winter visitor. It is intermediate in color between *actia* and *leucansiptila*. A few specimens in SD from Jacumba, La Puerta Valley, and Santa Ysabel were identified as *ammophila* by H. C. Oberholser, but they might also represent the pale extreme of *actia*. One specimen from San Diego on 20 August 1914, and four from Imperial Beach on 12 August 1914 Behle (1942) reported as *E. a. insularis* (Townsend), the darkly colored subspecies resident on the Channel Islands. These birds could have been dark variants of the local population of *actia* rather than wanderers from the islands, however. Other races of Horned Lark undoubtedly reach San Diego County in winter, especially *E. a. leucolacca* Coues, *E. a. lamprochroma*, (Oberholser), and *E. a. anthymia* (Oberholser), all of which have been recorded from Imperial County.

Swallows

Family Hirundinidae

TREE SWALLOW

Tachycineta bicolor (Vieillot)

Abundant spring migrant, fairly common to common fall migrant and winter visitor, rare summer resident. In fall and winter, Tree Swallows occur usually around lagoons, lakes, and ponds in the coastal lowland. Migrants begin arriving in early or mid-August (two at San Elijo Lagoon on 4 August 1974, SEL surv.), with one observation at the end of July (31 July 1964, San Diego area, G. McCaskie). The species is rather irregular in distribution and abundance in winter, but large numbers are seen occasionally: 175 at Whalen Lake on 3 January 1976 (G. McCaskie), 150 at San Elijo Lagoon on 5 January 1975 (SEL surv.), and 85 at Sweetwater Reservoir on 17 December 1977 (D. Parker). Spring migrants begin arriving in late January or early February (500 at Old Mission Dam on 26 January 1976, J. Dunn) and reach peak abundance in early or mid-March (755 at San Elijo Lagoon on 2 March 1975, SEL surv.). Tree Swallows may be seen in the foothill and desert zones as well as the coastal lowland during spring (300 in the Anza-Borrego Desert on 16 March 1975, G. McCaskie). By mid-April, the species is uncommon, and 25 April (1975, one at Old Mission Dam, J. Dunn) is the latest record of a migrant.

Tree Swallows breed very rarely and sporadically in San Diego County, which is the southern limit of their nesting range. Joseph Dixon (1906) found one nest at San Onofre 27–30 May 1904; J. B. Dixon (in Willett 1933) reported that "the species nests at Henshaw and Hodges Lakes." WF contains two egg sets, one collected 8 km (5 miles) north of Oceanside on 28 May 1916, the other, at Lake Hodges on 18 May 1924. An egg set in SBGM was collected at

Lakeside on 27 May 1917. Nesting activity has been recorded four times in recent years. K. Weaver observed a pair nesting at Kit Carson Park 6–21 May 1978; S. Goldwasser saw a pair attending a nest hole with young along the San Luis Rey River at Gird Road, 12–29 June 1978; G. McCaskie saw a pair feeding six fledglings at Lake Henshaw on 29 July 1978; five pairs were nesting at Old Mission Dam on 28 June 1980 (AB 34:931, 1980).

VIOLET-GREEN SWALLOW

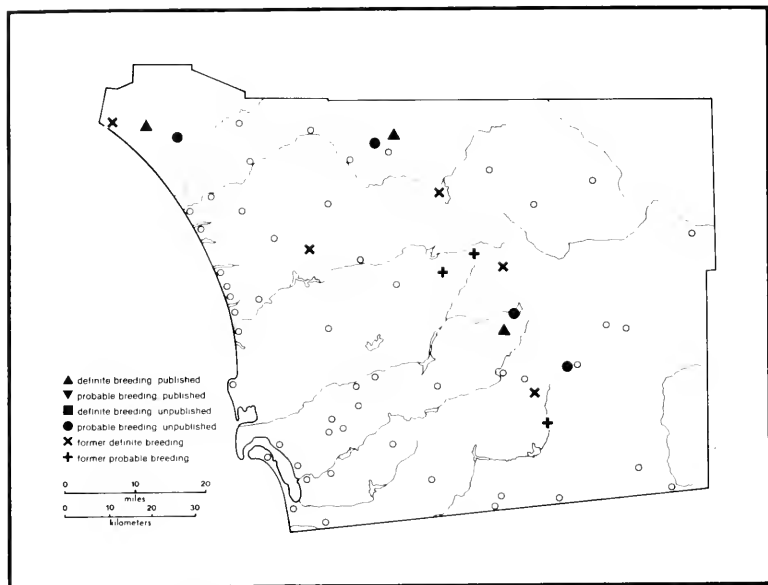
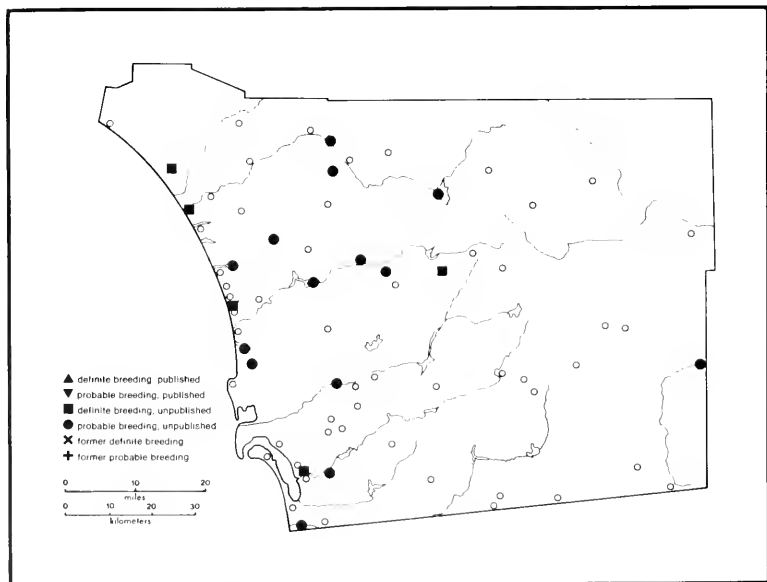
Tachycineta thalassina lepida Mearns

Very common to abundant spring and fall migrant, common to very common breeding summer resident; irregular winter visitor, usually rare. In spring, migrating Violet-green Swallows may be seen over any habitat throughout the county, but as with all species of swallows, they congregate over lagoons and lakes, and are more conspicuous during cloudy weather. Typical for spring are 65 at San Elijo Lagoon on 3 March 1974 (SEL surv.), 150 at Old Mission Sam on 5 May 1974, and 35 at Yaqui Well on 17 February 1974 (J. Dunn). Migrants begin arriving in the lowlands in early February (two at Sweetwater Reservoir on 5 February 1977, AB 31:374, 1977; 50 at Kit Carson Park on 6 February 1976, J. Dunn), but have not been reported in the mountain zone until mid-March (five on Volcan Mountain on 17 March 1884, Emerson 1887). Spring migration continues through mid-May (two at Old Mission Dam on 20 May 1979).

Breeding Violet-green Swallows occur throughout mixed coniferous-oak woodland in the mountains, where they usually nest in holes in trees. Examples of summer numbers are 60 from Paso Picacho to Cuyamaca Peak on 8 July 1978, and 40 along Agua Dulce Creek, Laguna Mountains, on 24 July 1976 (P. Unitt). A few records suggest the species breeds sporadically or very locally in the coastal lowland. F. E. Blaisdell (in Belding 1890) wrote "usually common in spring and summer" at Poway, while J. B. Dixon (in Willett 1933) reported Violet-green Swallow to be a "fairly common breeder in vicinity of Escondido." An egg set was collected at Lake Wohlford on 1 June 1930 (WF 29867). K. Weaver observed the only more recent lowland nesting known, of a pair in a crevice in a rocky road cut at Harmony Grove on 27 June 1978 and 6 June 1981. He also noted a pair (nest not located) at Woods Valley Campground, Valley Center, on 16 June 1979. Egg dates (7): 28 May – 22 June.

In fall, migrating Violet-green Swallows keep mostly to the mountains and foothills (500 at Lake Henshaw on 17 September 1978, P. Unitt); they are uncommon in the coastal lowland (maximum 10 in the Tijuana River Valley on 17 September 1973, J. Dunn) and unrecorded in the Anza-Borrego Desert at this season. Fall migration is mostly in August and September, with birds occurring rarely as late as early November (two in the San Diego area 8–9 November 1975, G. McCaskie).

The species apparently winters most frequently in the lower San Luis Rey River Valley, with as many as 60 at and

MAP 56. Breeding Distribution of Purple Martin (*Progne subis*)MAP 57. Breeding Distribution of Rough-winged Swallow (*Stelgidopteryx ruficollis*)

near Guajome Lake on 31 December 1977 (B. Morin, P. Unitt, P. Suffedini) and 50 at Windmill Lake on 28 December 1980 (H. Wier). Such numbers do not occur every year, however. Violet-green Swallows have been noted sporadically on San Diego Christmas Bird Counts, most recently in 1973 (one in the Otay River Valley on 15 December, G. McCaskie), with a maximum of 36 on 31 December 1961 (AFN 16:289, 1962). These earlier sight records may easily contain some proportion of misidentified Tree Swallows, however.

PURPLE MARTIN

Progne subis subis (Linnaeus)

Rare spring and fall migrant, rare and localized summer resident. Purple Martins have been observed in spring migration at many places in the coastal lowland, foothill, and mountain zones, but only once in the Anza-Borrego Desert (one at Yaqui Well on 25 April 1974, ABDSP file). Most lowland reports are from early April to mid-May; extremes are 22 March (1964, two at Solana Beach, G. McCaskie) and 6 June (1974, one at Point Loma, J. Dunn). Usually only one or two migrants are seen at a time; maxima are six at Presidio Park on 16 April 1975 (J. Dunn) and 20 in the Tijuana River Valley on 15 April 1967 (G. McCaskie).

During the breeding season, Purple Martins are confined largely to coniferous woodland in the Palomar, Cuyamaca, and Laguna Mountains, where they nest colonially in holes in isolated dead trees. Known colonies since 1970 are near the Palomar Observatory (eight on 16 July 1978), on Cuyamaca Peak (17 on 29 July 1978, P. Unitt), and at Pine Valley (two pairs in June 1974, AB 28:950, 1974—but not since that year). Six pairs were nesting in the coastal lowland at the "Horno Area" along San Onofre Creek in Camp Pendleton on 16 July 1978 (A. Fries). Some other recent breeding season localities are Lower Doane Valley in Palomar Mountain State Park (three on 16 July 1978), Agua Dulce Creek, Laguna Mts. (one on 24 July 1976, P. Unitt), and Lake Cuyamaca (12 on 29 April 1978, AB 32:1056, 1978).

In fall migration, Purple Martins again disperse through the lowland and foothills, and as in spring, only single individuals are usually noted. The maximum recorded is five, as in the Tijuana River Valley on 10 September 1976 (J. Dunn). Dates for fall migrants extend from 7 September (1977, one at Point Loma, P. Unitt) to 29 September (1963, one in the Tijuana River Valley, G. McCaskie); exceptionally 21 October 1978, one at Lake Henshaw, AB 33:216, 1979).

Formerly, Purple Martins were more numerous, though unevenly distributed. As migrants, Belding saw "a dozen or more" at San Diego on 28 April (year?), and Blaisdell reported them "common in the spring of 1883" (Belding 1890). Joseph Dixon (1906) reported the species as breeding commonly at San Onofre in 1904, 1905, and 1906, and J. B. Dixon found a colony of about 20 pairs at Lake

Henshaw on 3 June 1932 (Willett 1933). At Escondido, Hatch (1896) recorded three or four pairs on 11 June 1896, while Sharp (1907) knew of only a single pair persisting there until 1905. Two egg sets from Julian, 18 and 22 June 1915, are preserved in WF.

Subspecies: Purple Martin specimens from San Diego County do not match precisely any of the described races, but are closest to nominate *subis*. There are two factors in the species' geographic variation: overall size in both sexes, and darkness of the female and immature plumages. Behle (1968) recognized three races: nominate *subis*, breeding in the eastern United States (medium size, dusky forehead and underparts), *P. s. arboricola* Behle, breeding in the Rocky Mountains (large size, whitish forehead and underparts), and *P. s. hesperia* Brewster, breeding in the deserts of Baja California, southern Arizona, and Sonora (small size, color similar to *arboricola*). He did not consider California populations. Grinnell (1928a) studied specimens from California, Baja California, and the eastern United States, but had no material from the Rocky Mountains. He noted that California birds were the same size as those from the eastern United States, but averaged slightly paler on the forehead and underparts. Grinnell also reported a tendency for southern California martins to be smaller and paler than those from northern California. Since the differences between California and eastern birds were so slight, Grinnell called them both nominate *subis*. The nine specimens from San Diego County support Grinnell's conclusion. Two are adult males, four are one year old males, three are females, and all were collected at localities and dates that suggest they were local breeding birds. The males' wing lengths average slightly larger than Behle's (1968) average for eastern *subis* (145.5 vs. 144.2 mm), the females' slightly smaller (138.6 vs. 141.0 mm). None of the nine falls outside the range of *subis*. The females and one year old males are quite dusky on the breast, so are definitely not *arboricola* or *hesperia*. However, they have rather pale foreheads, paler than those of the eastern *subis* I compared them to in CAS.

ROUGH-WINGED SWALLOW

Stelgidopteryx ruficollis (Vieillot) subsp.

Common spring and fall migrant, fairly common to common breeding summer resident, very rare winter visitor. Rough-winged Swallows are widespread in migration, occurring in the desert as well as on the coastal slope, but have been reported in the mountain zone only once, at Palomar Mountain on 29 March 1976 (E. Becmer). A maximum number recorded for the coast in spring is 208 at San Elijo Lagoon on 7 April 1974 (SEL surv.), for the Anza-Borrego Desert, 50 on 16 March 1975 (G. McCaskie). Migrants arrive usually in mid-February, sometimes as early as late January (two at Old Mission Dam on 26 January 1976, J. Dunn; San Diego, 27 January, year not cited, Cooper 1870; one at Old Mission Dam on 29 January 1975, AB 29:743, 1975).

Most known nesting localities for Rough-winged Swallows are along or near the coast. At most of these localities, the species is at best only fairly common, since it is not colonial, but large numbers have been noted at two places: 50 on the lower San Luis Rey River. Oceanside on 28 May 1979 (nesting in drain holes under Interstate Highway 5, P. Unitt); 99 at San Elijo Lagoon on 1 June 1975 (nesting in burrows in steep banks, SEL surv.). In the foothill zone, Rough-winged Swallows have been recorded in the breeding season at only two localities: Ballena (juvenile on 18 June 1889, SD 1273) and Lake Henshaw (6 on 29 July 1978). Ten at Carrizo Marsh on 6 May 1978 (P. Unitt) may indicate the species breeds locally in the Anza-Borrego Desert as well. Egg dates (8): 1–23 May.

Fall migrants are numerous from mid-August through mid-September (50 in the Tijuana River Valley on 15 August 1974, J. Dunn; 35 at Lake Hodges on 17 September 1978, P. Unitt). By mid-October, the species is rare, but exceptional records extend to mid-November (9 November, year not cited, San Diego, Cooper 1870; 16 November 1974, San Diego area, G. McCaskie).

Rough-winged Swallows have been reported along and near the coast about eight times between late November and early January, with numbers up to two or three in the Tijuana River Valley 24 November 1963 – 4 January 1964 (AFN 18:388, 1964), and six at Valley Center on 2 January 1980 (AB 34:307, 1980). Earlier San Diego Christmas Bird Count reports of larger numbers (seven on 2 January 1961; 20 on 21 December 1963) should be regarded with skepticism.

Subspecies: Only five Rough-winged Swallows from San Diego County are preserved in SD. All have been examined and identified by A. M. Rea. The local breeding population is the paler, grayer *S. r. psammochroa* Griscom, as indicated by the juvenile from Ballena. *Psammochroa* breeds from southern California, southern Arizona, and Texas south to southern Mexico. Two adults collected at Bonita on 20 April 1918 are also *psammochroa*, while one from National City on 27 April 1913 is intermediate with the following race. One taken 5 km (3 miles) west of Santee on 1 May 1921 is a migrant of the darker, browner race *S. r. scrippensis* (Audubon), which breeds from southern British Columbia south to the Tehachapi Mountains and east to the Atlantic. Obviously many more specimens are needed before the migration schedule of the local breeding birds (*psammochroa*) can be distinguished from the schedule of the birds which pass through San Diego County to breed farther north (*scrippensis*).

BANK SWALLOW

Riparia riparia riparia (Linnaeus)

Rare fall migrant, casual winter visitor and spring migrant, formerly bred at one locality. Bank Swallows are usually seen with concentrations of other migrating swallows; all reports are from the coastal lowland, mostly within 3–5 km (2–3 miles) of the coast. Seldom are more than one or two

Bank Swallows seen in a day; the maximum recorded is five in the Tijuana River Valley on 17 September 1973 (J. Dunn). The species is most frequent in mid and late September, with occasional observations through mid-October. Early fall dates are 15 July (1972, one in the San Diego area, G. McCaskie) and 8 August (1914, Tijuana River mouth, SD 32097); latest dates, 9 November (1974, one in the Tijuana River Valley, G. McCaskie) and 17 November (1977, one at the same locality, J. Dunn).

Bank Swallows have been reported twice in winter: one in the Otay River Valley 21–22 December 1968 (AFN 23:522, 1969), and one at Old Mission Dam 26 January 1976 (AB 30:768, 1976). I find only two reports of the species in spring: one at Imperial Beach on 4 March 1973 (G. McCaskie), and one at San Elijo Lagoon on 11 April 1975 (J. Dunn).

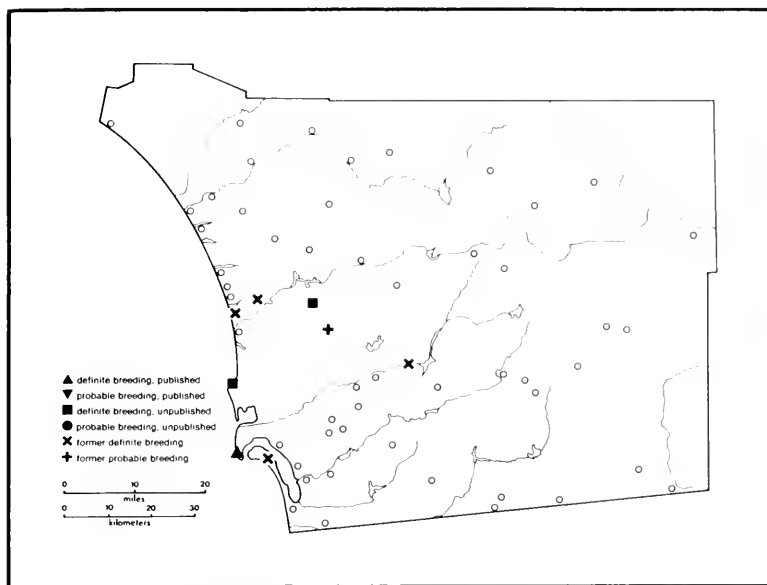
Carpenter (1918) reported a colony of Bank Swallows nesting in burrows in a "sea-wall a few miles from Oceanside" on 13 May 1917, and collected 11 egg sets on that date (WF 57466–76). An additional eight sets were taken on 2 May 1919 (WF 57458–65). The egg data cards record the locality as Las Flores, a point on the coast of present-day Camp Pendleton. SBCM has a set collected "north of Oceanside" on 9 May 1925. No information has since been gathered on this colony, and no active colonies are known in 1980 anywhere in southern California. Probably the species has decreased as a migrant as well, since Stephens (1919a) called it a "rather common migrant."

BARN SWALLOW

Hirundo rustica erythrogaster Boddaert

Common spring migrant, uncommon and localized summer resident, very common fall migrant, very rare winter visitor. Spring migrant Barn Swallows occur widely in the coastal lowland, foothills, and Anza-Borrego Desert. The earliest birds arrive in early March (one at Mission Bay on 1 March 1974, P. Unitt; two at San Elijo Lagoon on 2 March 1975, SEL surv.), with one report for late February (one at Lake Henshaw on 25 February 1978, C. Edwards). After peak abundance in early May, numbers decrease rapidly until the last migrants depart in mid or late May (eight at Spring Valley on 17 May 1976; one at the south end of San Diego Bay on 23 May 1974, J. Dunn).

As a breeding bird, the Barn Swallow is known principally from near rocky sea cliffs on Point Loma (Grinnell 1915; 10 on 2 and 3 June 1977, P. Unitt) and at La Jolla (egg sets collected on 16 May 1922 and 17 May 1935, WF; three birds seen on 2 June 1976, J. Dunn). The species probably breeds sporadically elsewhere along the coast. Gander (1927b) found fledglings in a nest "under a wharf at Coronado" on 6 August 1927; WF has an egg set collected from a nest under the eaves of the Hotel Del Coronado on 24 March 1912, and two collected at Solana Beach on 16 May 1933. F. E. Blaisdell (in Belding 1890) considered Barn Swallow "usually a common summer resident" at Poway,

MAP 58. Breeding Distribution of Barn Swallow (*Hirundo rustica*)

and WF has egg sets from two inland localities (Rancho Santa Fe, 18 May 1933; El Monte, 23 May 1920). The only recent summer reports away from the coast are of a single bird at Valley Center on 16 June 1979, and a pair nesting under a bridge of Interstate Highway 15 at Rancho Bernardo on 23 May 1981 (K. Weaver). One bird at San Elijo Lagoon on 7 July 1974 (SEL surv.) and two at Coronado Cays on 10 July 1978 (P. Unitt) may have been early fall migrants.

In fall, the species is again widespread in the coastal lowland and foothill zones, but there is only one report from the mountains (Palomar Mountain, 15 September 1950, E. Beemer) and no information from the Anza-Borrego Desert. Migrants arrive by late July (four in the Tijuana River Valley on 23 July 1977) and reach their maximum numbers in mid-September (250 in the Tijuana River Valley on 16 September 1977; 60 at Agua Hedionda Lagoon on 16 September 1978, P. Unitt). Most leave by the end of October, though a few occur to mid or late November (two in the Tijuana River Valley on 16 November 1974, J. Dunn; one at Whalen Lake on 27 November 1978, P. Unitt).

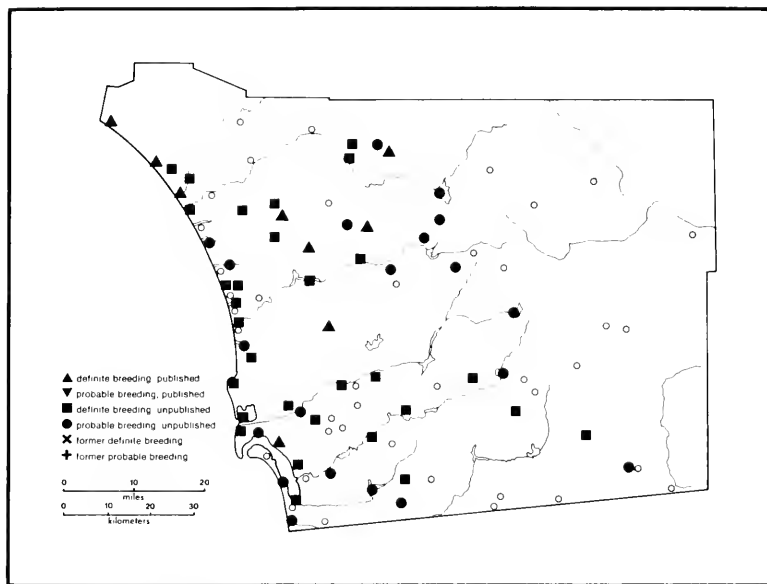
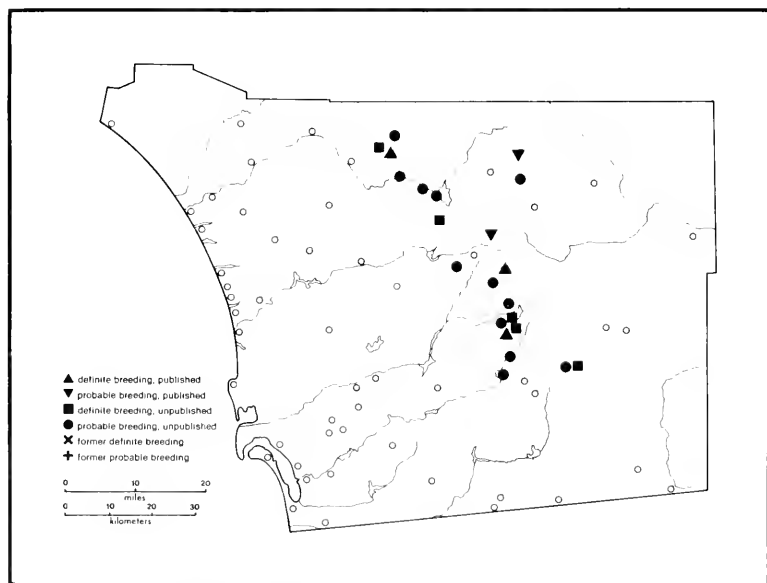
All winter reports are from near the coast. Three were seen in Mission Valley on 9 January 1965 (AFN 19:417, 1965), and a single bird was in the Tijuana River Valley 18–26 December 1966 (G. McCaskie). Barn Swallows have been recorded seven times on San Diego Christmas Bird Counts, most recently in 1977 (two at Sweetwater Reservoir on 17 December, AB 32:886, 1978), and once on an

Oceanside count (five at Camp Pendleton on 31 December 1977, AB 32:375, 1978).

CLIFF SWALLOW

Hirundo pyrrhonota tachina (Oberholser)

Abundant spring migrant and summer resident, fairly common fall migrant, accidental in winter. Cliff Swallows are very widespread in San Diego County, occurring as spring migrants in the mountains ("about a dozen" at Volcan Mountain on 2 April 1884, W. O. Emerson in Belding 1890) and in the Anza-Borrego Desert (50 on 10 April 1976, G. McCaskie), as well as in the coastal lowland and foothills. Arrival is usually in late February or early March, very rarely as early as early February (one at San Elijo Lagoon on 2 February 1975, SEL surv.; one in the Tijuana River Valley on 4 February 1962, AFN 16:365, 1962). Cliff Swallows now nest mostly on bridges and buildings, but originally used inland cliffs and sea bluffs (eggs near Oceanside on 13 May 1917, Carpenter 1918). Many large colonies are located near the coast (500 at the Santa Margarita River mouth on 27 July 1978, P. Unitt; 515 at San Elijo Lagoon on 2 June 1974, SEL surv.). Cliff Swallows nest more sparsely in the foothill and mountain zones, occurring in the breeding season east to Lake Cuyamaca (40 on 6 May 1978), Interstate Highway 8 at La Posta Creek (25 building nests on bridge, 26 March 1978), and 1.6 km (1 mile) west of Boulevard (five on 26 June 1978, P. Unitt),

MAP 59. Breeding Distribution of Cliff Swallow (*Hirundo pyrrhonota*)MAP 60. Breeding Distribution of Steller's Jay (*Cyanocitta stelleri*)

but not in the Anza-Borrego Desert. Egg dates (51): 29 April – 3 July.

The birds leave their nesting colonies in August, but migrants may be seen in small numbers up to early October, very rarely later in that month (two in the Tijuana River Valley on 16 October 1977, J. Dunn; one at Guajome Lake on 27 October 1975, A. Fries). Cliff Swallows have been reported twice in winter: six on the San Diego Christmas Bird Count, 23 December 1967, AFN 22:394, 1968; one at Otay on 15 December 1973, J. Dunn, AB 28:536, 1974.

Subspecies: The breeding population of San Diego County has previously been listed as *H. p. pyrrhonota* Vieillot (A.O.U. 1957). However, all the 26 specimens from this area in SD are *H. p. tachina*, according to the criteria presented by Phillips et al. (1964). Most of the 26 were collected in May and June at nesting colonies. All have medium brown to pale buffy foreheads, not white as do *pyrrhonota* from Oregon. Their wing lengths range from 99 to 108.5 mm, except for one female with 109.7 (feeding young at Ocean Beach on 7 June 1945, SD 19179). The average wing length for all 26 is 104.5 mm, well below the minimum of 107 reported by Phillips for nominate *pyrrhonota*. Still, *pyrrhonota* might be expected to migrate through San Diego County, since it breeds to the north. Specimens of migrants in September and October (none have yet been collected) particularly should be investigated.

Crows and Jays

Family Corvidae

PIÑON JAY

Gymnorhinus cyanocephalus Wied

Although Piñon Jays are common in the Garner Valley of Riverside County only 16 km (10 miles) north of the county line, and are common in the Sierra Juarez an equally short distance south of the border, they occur only as very rare vagrants in San Diego County. The few patches of piñon woodland in this county (the largest being on the north slope of Whale Peak in the Vallecito Mountains) are evidently too small to support a resident population. Piñon Jays have been recorded in seven different years, on dates ranging from 1 October to 9 March. F. Stephens saw a flock and collected a specimen at Mount Laguna on 21 February 1877 (Willett 1912, SD 756—specimen label says 9 March). Two other specimens in SD (757–758) were taken at Vallecito on 27 November 1891. W. M. Pierce saw “a flock of about 75” near San Onofre in March (Willett 1933; date and year not recorded but probably 1915). Some specimens were reportedly collected at Vista about 1 October 1935 (anonymous 1935); I do not know the present location of these specimens. Two were collected at Jacumba on 11 March 1945 (SD 19150–1). In 1955, 18 and 12 were seen at Ramona on 24 October and 23 November, and 14 were noted at Sutherland Dam on 25 October (AFN 10:58, 1956). Most recently, G. McCaskie saw a single Piñon Jay at Lake

Henshaw on 25 February 1973 (AB 27:664, 1973).

STELLER'S JAY

Cyanocitta stelleri frontalis (Ridgway)

Fairly common to common resident. The range of the Steller's Jay in San Diego County approximates the distribution of montane coniferous woodland, its preferred habitat. The species also occurs locally in oak woodland with few or no conifers in the upper foothill zone as at La Jolla Indian Reservation on the San Luis Rey River (two on 30 June 1977), Lake Henshaw (four on 26 May 1976), Mesa Grande (nesting on 30 May 1975, A. Fries), and Descanso (two on 17 October 1978). Steller's Jays are most numerous and conspicuous where they concentrate at campgrounds, easily exploitable sources of food (40 at Green Valley Falls on 31 August 1975, P. Unitt). Egg dates (18): 3 May – 13 June.

The Steller's Jay is a casual vagrant in the coastal lowland where there are six records: one at Pauma Valley, 8 August 1953 (AFN 8:43, 1954); one in Presidio Park, 9 February 1956 (AFN 10:284, 1956); two at Dos Picos County Park, 20 March 1972 (A. Fries); Santee, February 1974 (SD 38882, preserved as skeleton); one in Balboa Park, 4 December 1977 – 7 March 1978 (AB 32:400, 1978); one at Point Loma on 4 October 1978 (AB 33:216, 1979).

SCRUB JAY

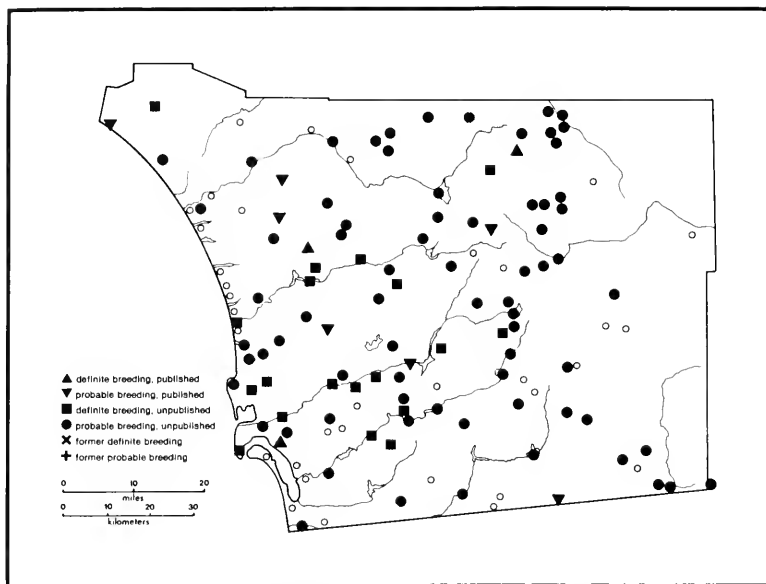
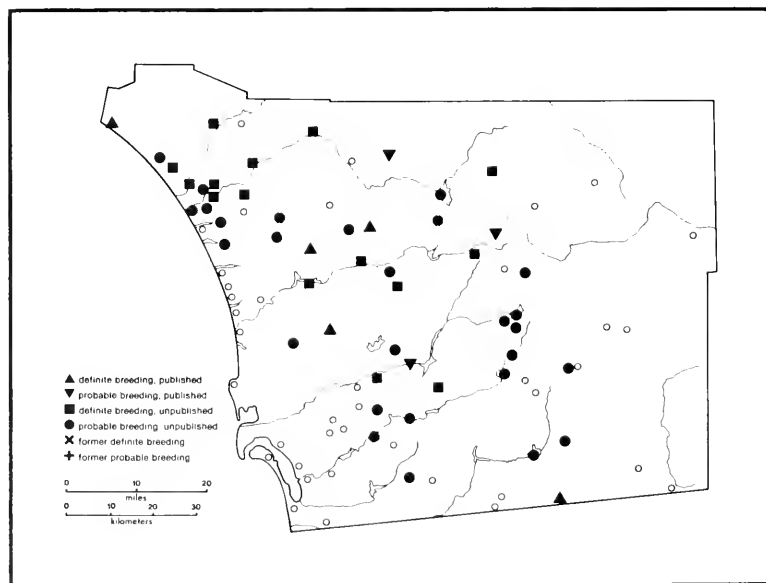
Apelocoma coerulescens obscura Anthony

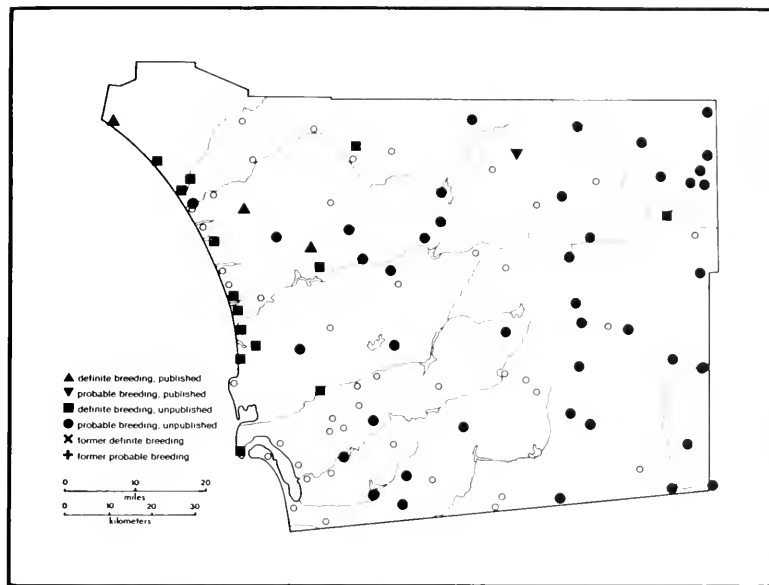
Common resident in oak woodland, chaparral, juniper woodland, and residential areas. The species' range covers the entire coastal slope of the county, excluding the Coronado Peninsula, and extends east on the desert slope as far as Collins Valley (two on 18 June 1973, ABDSP file), Peña Spring (10 September 1976), the Vallecito Mountains (five on 15 April 1978), McCain Valley (9 May 1971) and extreme southwestern Imperial County (three on 24 March 1978, P. Unitt). Egg dates (56): 15 March – 2 June; Sharp (1907) reported eggs from 10 March to 10 June.

CLARK'S NUTCRACKER

Nucifraga columbiana (Wilson)

Very rare visitor. Clark's Nutcrackers are usually recorded in coniferous woodland on the highest mountains of the county. They occur only in occasional years, but substantial numbers have been noted a few times. F. Stephens collected a specimen “from a fair-sized flock” at Mount Laguna on 21 February 1877 (Willett 1912, SD 755). Fortner (1920) saw “flocks ranging from a few birds to 15 or 20 in the flock” in the Laguna Mountains on 31 May and 1 June 1920. In the fall of 1935, nutcrackers were “quite common throughout the entire Cuyamaca Region” and “flocks of 50 to 60 birds” were reported from Volcan Mountain and Harrison Park (anonymous 1935, two specimens from Volcan on 28 September 1935, SD 17095–6). There are eight other records of smaller numbers at places in the mountain zone, with no definite seasonal pattern.

MAP 61. Breeding Distribution of Scrub Jay (*Aphelocoma coerulescens*)MAP 62. Breeding Distribution of American Crow (*Corvus brachyrhynchos*)

MAP 63. Breeding Distribution of Common Raven (*Corvus corax*)

Clark's Nutcrackers have been noted six times in the coastal lowland (one at Dulzura, 23 September 1935, anonymous 1935; one at Spring Valley, 4 November 1954, Huey 1954; one found dead on beach at Encinitas, 24 August 1955, AFN 9:404, 1955, specimen not in SD; two at Bonita, 31 December 1962, with one remaining to 17 February 1962, G. McCaskie; one at Point Loma, 17 September 1972, AB 27:123, 1973; and another at the same locality, 29 October 1972, SD 38237). In the Anza-Borrego Desert, four individuals were noted during October 1972 (AB 27:123, 1973; ABDSP file), and a single individual was reported on 25 November 1955 (AFN 10:59, 1956). Comparison of the years of nutcracker occurrences with those of Piñon Jay reveals that irruptions of the two species frequently coincide.

AMERICAN CROW

Corvus brachyrhynchos hesperis Ridgway

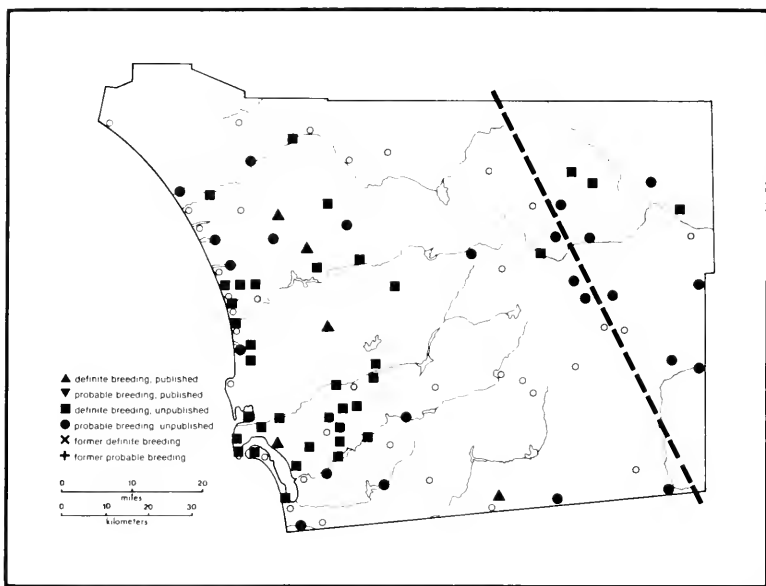
Common to very common resident. Crows occur in riparian, oak, or coniferous woodlands, and in residential areas, and they forage out into grassland and agricultural land. In spite of these generalized habitat preferences, the species has a peculiarly restricted distribution in San Diego County. Although crows are very common in northern coastal San Diego County (126 in the San Luis Rey River Valley, Oceanside, on 1 January 1979, J. Dunn), they occur regularly on the coast south only to San Elijo Lagoon, where they

are rare (SEL surv.). In the southern half of the county, crows usually occur no closer to the coast than Poway (Belding 1890), Lakeside (eggs taken on 12 April 1897, WF), El Cajon (two on 11 May 1976), and Jamacha (four on 12 and 13 December 1978, P. Unitt). The species was recorded on San Diego Christmas Bird Counts at Otay Ranch until 1974. Reports of vagrants near the coast in southern San Diego County are one at Otay Mesa 8-9 November 1975 (G. McCaskie), and one in the Tijuana River Valley 12 November 1976 (J. Dunn). Crows occur throughout the foothill and mountain zones, and seem especially numerous around Lake Henshaw (up to 150 on 13 November 1977). Points on the eastern edge of their range are Banner (two on 15 April 1978), Mount Laguna (24 April 1977, P. Unitt), and Campo (breeding, Grinnell 1915). Egg dates (38): 24 March - 18 May.

COMMON RAVEN

Corvus corax clarionensis Rothschild and Hartert

Fairly common to common resident. The Common Raven is one of the few species which may be seen almost everywhere in the county. Ravens scavenge along ocean beaches, wander over densely populated urban areas, soar over the forested summits of Cuyamaca Peak and Hot Springs Mountain, and visit the most barren parts of the Anza-Borrego Desert. They are most numerous in grassland and open agricultural country, or where there are sources



MAP 64. Breeding distribution of Loggerhead Shrike, *Lanius ludovicianus gambeli* west of the dashed line, *L. l. excubitorides* to the east.

of abundant food, such as garbage dumps. An exceptional concentration was about 75 drawn to caterpillars feeding on new spring plant growth in the Anza-Borrego Desert on 30 March 1975 (G. McCaskie). For nesting, Ravens usually need ledges or crevices in sea bluffs or inland cliffs. Their breeding range is thus far more restrictive than their foraging range, but suitable sites are still scattered throughout the county. K. Weaver observed a pair nesting in a willow tree in riparian woodland at Kit Carson Park; the four young fledged on 29 May 1978. Egg dates (41): 6 March – 15 May.

Subspecies: The A.O.U. Check-list (1957) includes San Diego County in the range of *C. c. sinuatus* Wagler, the race widespread in temperate North America. However, Rea (1983) restudied the species, finding that ravens from southern and Baja California are smaller than *sinuatus*, and match *C. c. clarionensis* Rothschild and Hartert. Only one female from San Diego County is large enough to fall in the zone of size overlap between *sinuatus* and *clarionensis*.

tered bushes, or broken chaparral; basically anywhere expanses of open ground for foraging are near scattered bushes or low trees for nest sites and perches. The species is widespread in San Diego County, and is absent only from the mountain zone. Santa Ysabel, elevation 910 m (3000 feet), is the highest locality where shrikes have been recorded on the coastal slope (5 March 1890, SD 1287), while in the Anza-Borrego Desert they extend up to at least 1220 m (4000 feet) in the Vallecito Mountains (one on 15 April 1978, P. Unitt). Egg dates (66): 3 March – 31 May; Sharp (1907) reported 22 June.

Subspecies: Two races of Loggerhead Shrike inhabit San Diego County. *L. l. gambeli* Ridgway, which breeds from southern British Columbia south to San Diego County, occupies the coastal slope and extends to the edge of the Anza-Borrego Desert at San Felipe Cañon, altitude 640 m (2100 feet) (22 March 1875, incubating female, SD 1290) and La Puerta Valley (7 December 1923, SD 1849, and 10 June 1928, SD 3080, apparent intergrades with *excubitorides*). *L. l. excubitorides* Swainson breeds from central Alberta south to northeastern Baja California, Sinaloa, and western Texas, probably intergrading with *gambeli* in much of the Great Basin and Rocky Mountain area. Phillips et al. (1964) considered *L. l. nevadensis* Miller and *L. l. sonoricensis* Miller synonyms of *excubitorides*. In San Diego County, *excubitorides* breeds in the Anza-Borrego Desert, and possibly occurs as a rare winter visitor on the coastal slope; two specimens from Witch Creek taken

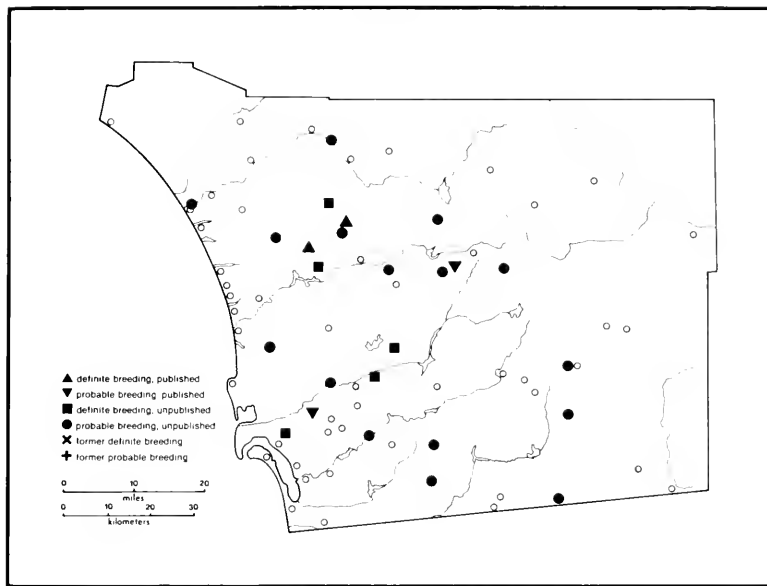
Shrikes

Family Laniidae

LOGGERHEAD SHRIKE

Lanius ludovicianus Linnaeus subsp.

Fairly common resident in agricultural land, desert wash and desert-edge scrub, grassland or beach areas with scat-

MAP 65. Breeding Distribution of Hutton's Vireo (*Vireo huttoni*)

on 26 November 1903 and 25 January 1904 (Bishop 1927, Willett 1933). The two forms are fairly easy to distinguish in this area, *gambeli* having a dark gray back, a medium gray breast, and hardly any paleness on the rump, *excubitorides* having a much paler back, practically white underparts, and a conspicuous white rump.

Vireos

Family Vireonidae

HUTTON'S VIREO

Vireo huttoni huttoni Cassin

Uncommon resident in live oak woodland, locally in riparian woodland, and rarely, in mixed coniferous-oak woodland. The Hutton's Vireo's range in San Diego County approximates the distribution of live oak trees. The birds are most numerous in the foothill zone and inland parts of the coastal lowland, extending toward the coast as far as the lower San Luis Rey River, Oceanside (one on 22 June 1977, P. Unitt), San Marcos (two on 21 February 1930, MVZ 146771-2), Alvarado Canyon (30 April 1938, Crouch 1943), Old Mission Dam (8 June 1974), and Jamacha (one on 5 December 1978, P. Unitt). Hutton's Vireo is also a rare or sporadic resident in Balboa Park; D. Herron saw a bird building a nest there on 2 August 1977. Points on the east edge of the species' range are Julian (one on 29 January 1977, J. Dunn), Agua Dulce Creek, Laguna Mountains (14 July 1974,

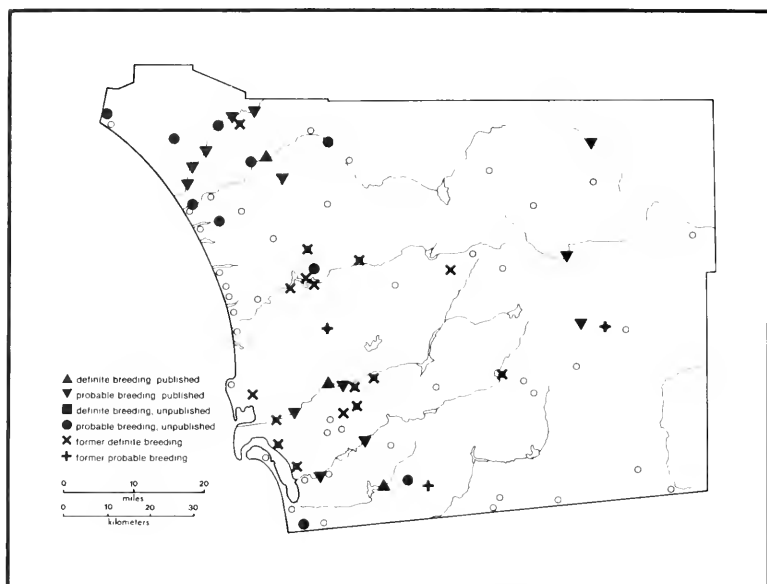
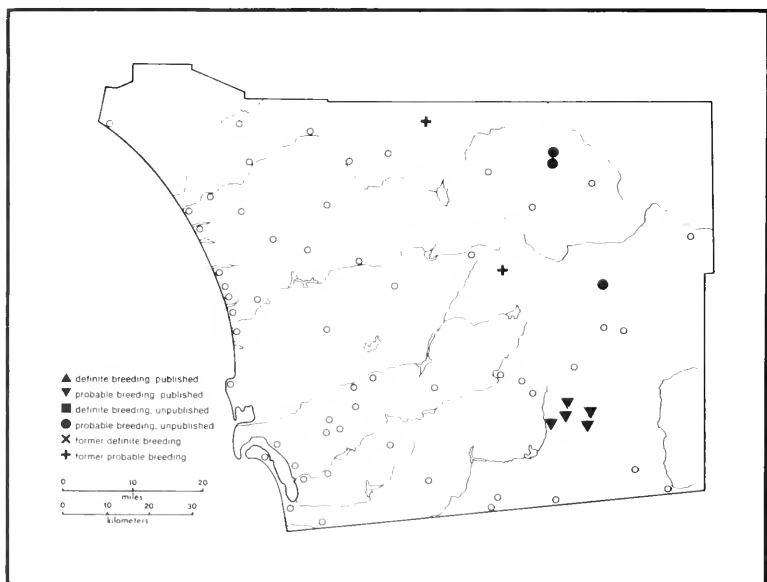
P. Unitt), Cibbets Flat (one collected of several seen on 31 August 1981, SD 41542, A. M. Rea) and Campo (8 February 1877, SD 1311). Egg dates (4): 27 March - 16 May; a pair was building a nest at Silverwood Wildlife Sanctuary on 7 March 1975 (J. Dunn). This is the only San Diego County breeding vireo that has not decreased much in abundance since the advent of Brown-headed Cowbirds; the vireo has apparently never been common.

Hutton's Vireos also occur rarely as migrants or winter visitors to places, mostly parks, in the coastal lowland outside their breeding range. Dates for these wanderers extend from 10 October (1970, one in the Tijuana River Valley) to 22 March (1964, two at Presidio Park, G. McCaskie).

BELL'S VIREO

Vireo bellii pusillus Coues

Uncommon and very localized summer resident, very rare migrant and winter visitor. The Bell's Vireo is restricted as a breeding bird to riparian woodland, and most of the population is located in the coastal lowland. Extensive study in 1978 by Sharon Goldwasser (Goldwasser et al. 1980) and in 1980 and 1981 by Larry R. Salata (1981) gives us a nearly complete picture of the species' present breeding distribution. While the following totals are probably not exhaustive, they certainly indicate the county population is fewer than 100 pairs. Goldwasser found five territorial males at three different localities in Camp Pendleton, and 46 territorial males at 13 different locations in the remainder of the

MAP 66. Breeding Distribution of Bell's Vireo (*Vireo bellii*)MAP 67. Breeding Distribution of Gray Vireo (*Vireo vicinior*)

county. Salata's survey, confined to Camp Pendleton, revealed 15 territorial males in 1980 and 27 in 1981. All but two of these were along the Santa Margarita River. Other areas with relatively large populations are along the Santa Margarita River north of Fallbrook (seven territorial males), on the San Luis Rey River at Gird Road, 5 km (3 miles) northeast of Bonsall (five), on the San Diego River around Old Mission Dam (eight), and on Jamul Creek above Lower Otay Lake (nine). The Bell's Vireo occurs also at three places in the Anza-Borrego Desert: Lower Willows in Coyote Creek Canyon (eight territorial males), Sentenac Canyon (one), and Vallecito Creek near Campbell Grade (one). Some recent localities not reported by Goldwasser et al. (1980) may represent sporadic breeding, such as the lower San Luis Rey River in Oceanside (one on 22 June 1977, P. Unitt), Wilderness Gardens County Park on the San Luis Rey River near Pala (one on 4 May 1976, A. Fries), Kit Carson Park, Escondido (one on 26 April 1980, K. Weaver) and the Tijuana River Valley (one pair through summer 1980, E. Copper). The Bell's Vireo has been noted once recently in the foothill zone, with one along Campo Creek 5 km (3 miles) west of Campo on 21 April 1977 (P. Unitt), but this may have been a migrant, not a local breeding bird. Egg dates (28): 7 May – 12 July. Almost all nests are placed in dense willow thickets. Both Goldwasser and Salata recorded a mean nest height of about one meter. Summer residents arrive in late March or early April and depart during September; extreme dates are 19 March (1972, two at Old Mission Dam, AB 26:808, 1972) in spring, 23 September (1977, one at the same locality, B. Cord) and 5 October (1884, Poway, F. E. Blaisdell in Belding 1890) in fall. An exceptionally early migrant at a non-breeding locality was at Agua Caliente Springs on 14 March 1976 (AB 30:886, 1976).

The species is seen as a migrant in non-breeding habitat very rarely from late August (22 August 1968, Imperial Beach, SD 36796) to late October (28 October 1975, Tijuana River Valley, AB 30:128, 1976). There are also five winter records: one found in Mission Valley near the San Diego Mission on 1 January 1963 was collected on 4 January (McCaskie and Banks 1964, SD 30514); one at Bonita 18 December 1969 – 17 January 1970 (AFN 24:540, 1970); one at Otay on 27 December 1970 (AB 25:629, 1971); one at the same locality on 6 January 1979 (AB 33:316, 1979); and one at Coronado on 15 December 1979 (AB 34:663, 1980).

The population of Bell's Vireo in San Diego County declined greatly from 1920 to 1980. Cooper (1874) called the species "common;" Belding (1890), "rather common;" and Sharp (1907), "very common." Two factors are to blame for this decline: primarily, brood parasitism by Brown-headed Cowbirds, and secondarily, destruction of riparian woodland habitat. Cowbirds were first recorded in the coastal lowland of San Diego County in 1911; Bell's Vireos were first found parasitized in 1915 (egg sets in WF) and

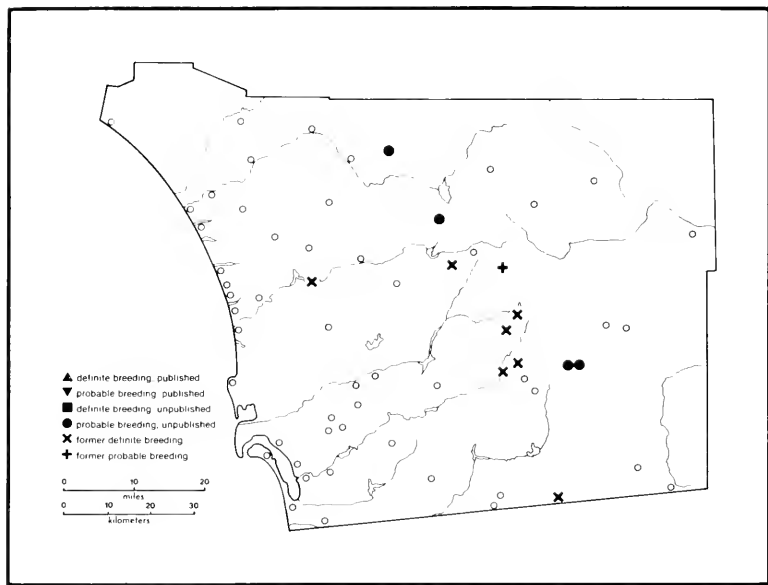
reported in 1919 by Sharp (1920). By 1934, N. K. Carpenter (in Friedmann 1934) reported "it is now difficult to find a nest of this bird without one or more eggs of the cowbird." Goldwasser et al. (1980) reported that 50% of the nests they found had been parasitized by cowbirds; Salata (1981) recorded a rate of 47%. Brood-parasitism inevitably results in the vireos' abandoning their nests or in raising cowbird instead of vireo chicks. During the pre-cowbird era, Bell's Vireos bred locally in the foothill zone, besides being far more widespread in the lowland, with nests collected at Descanso and Witch Creek (WF) and a bird collected at the latter locality on 13 September 1908 (MVZ 4057). Maintenance of Bell's Vireo as a breeding bird in California demands preservation of substantial amounts of riparian woodland habitat. Deliberate reduction of cowbird populations at localities favored by vireos will be necessary as well. Unfortunately, there seems to be no way to reverse the environmental changes which permitted cowbirds to establish themselves so abundantly in San Diego County. However, the vireos are mobile and exploit their habitat opportunistically; Salata (1981) reported that a bird banded in Santa Barbara County in 1979 mated and successfully fledged at least one young along the Santa Margarita River in 1981. Conservation efforts in San Diego County are particularly necessary since about 45% of the population of *V. b. pusillus* north of the Mexican border lives in this county.

Subspecies: *V. b. pusillus*, which breeds in California and northwestern Baja California, exclusive of the Colorado River Valley, is the resident race in San Diego County. Two sight records of fall migrants may represent the nominate race *V. b. bellii* Audubon, which breeds east of the Rocky Mountains: one in the Tijuana River Valley on 28 October 1975 (cited above) and one at the same locality on 7 September 1978 (AB 33:216, 1978). The eastern birds are olive above with yellow flanks; *pusillus* is very gray, with only a faint olive wash on the rump in fresh plumage. Specimens are needed to verify identifications of *V. b. bellii*, or of the races *V. b. arizonae* Ridgway and *V. b. medius* Oberholser with intermediate coloration. Any of these could reach San Diego County as a vagrant.

GRAY VIREO

Vireo vicinior Coues

Uncommon and very localized summer resident; accidental as a migrant away from breeding localities. Gray Vireos are known in San Diego County in dense chaparral dominated by chamise (*Adenostoma fasciculatum*) and *Ceanothus* spp. between 1100 and 1520 m (3600 and 5000 feet) elevation on the south slopes of the Laguna Mountains. The species was rediscovered in this area on 4 June 1977 by Michael U. Evans, who located 12 singing males at three places: hillsides just east of the intersection of Buckman Springs Road and Interstate Highway 8, along Kitchen Creek Road from Cibbets Flat north 5 km (3 miles), and



MAP 68. Breeding Distribution of Solitary Vireo (*Vireo solitarius*)

along La Posta Truck Trail, 5–10 km (3 to 6 miles) north of Interstate Highway 8. The birds probably inhabit other areas of dense chaparral in San Diego County, but they are as yet known only from the small region outlined by Evans' original discovery. In Riverside County, Grinnell and Swarth (1913) reported that Gray Vireos preferred chaparral dominated by redshanks (*Adenostoma sparsifolium*), but I failed to find the species during my brief visits to such habitat at Oak Grove, in Chihuahu Valley, and near Warner Springs. The Gray Vireo may occur also as a very rare summer resident in desert-edge scrub. It has been reported from three localities in this region: South Fork of Borrego Palm Canyon, elevation 730 m (2400 feet) (one on 9 July 1972 and 11 May 1973), Palm Mesa (one on 14 May 1973), and head of Mine Canyon on Piñon Mountain (one on 13 May 1980, A. Morley and ABDSP file).

Recent dates for Gray Vireos extend from 25 March (1979, Cibbets Flat, AB 33:806, 1979) to 17 July (1977, La Posta Truck Trail, J. Butler), but the birds undoubtedly remain to late August, as Grinnell and Swarth (1913) reported them in the San Jacinto Mountains to 27 August. Migrants have been reported out of breeding habitat only twice: one at Vallecito on 1 August 1959 (AFN 13:456, 1959), and two at Bonita on 1 May 1962 (AFN 16:448, 1962); the former record may be questionable.

The Gray Vireo was probably more common and more widespread before 1910 than in 1980. Stephens (1878) reported the species "not uncommon" in summer in the

vicinity of Campo "from the lower limit of pines down to about 3000 feet [910 m] altitude," and an early arrival date at Campo of 24 March 1876. Belding (1890) noted a pair at Campo in 1884. Stephens (in Belding 1890 and Willett 1912) also reported the Gray Vireo from Julian. There are five specimens in MVZ (3631-5) collected by Stephens at Campo in May 1908, including an incubating female on 13 May. In SD is one specimen (1324) taken at Campo on 27 March 1877, and two from Oak Grove (1325-6) on 2 May 1889 and 11 April 1893. The Gray Vireo, like most of its congeners, probably has been reduced in numbers by cowbird parasitism, as was reported in the San Bernardino Mountains by Hanna (1944).

SOLITARY VIREO

Vireo solitarius (Wilson) subsp.

Uncommon spring and fall migrant, rare summer resident, rare winter visitor. Migrating Solitary Vireos may stop in any habitat with trees throughout San Diego County. Spring migration extends from late March or early April through mid-May, with extreme records of 14 March (1970, Point Loma, AFN 24:643, 1970) and 22 May (1909, Vallecito, MVZ 8302). The species is usually seen singly, but an exceptional 12 were banded at Point Loma on 24 April 1966 (AFN 20:547, 1966).

In summer, breeding Solitary Vireos are restricted to oak and mixed coniferous-oak woodlands in the upper foothill and mountain zones. There are few recent summer reports:

from Palomar Mountain (14 June 1977), Mesa Grande (29 May 1977), and Mount Laguna (20 May 1972, A. Fries; four on 30 May 1974, J. Dunn; one on 24 July 1976, P. Unitt). The species was formerly more numerous and widespread; Cooper (1874) called it "not rare" in the Cuyamaca Mountains, and Stephens (1919a) called it a "rather common summer resident of timbered cañons in the mountains." In WF are egg sets taken at several spots in the upper foothill and mountain zones, as well as one from near Lake Hodges on 2 June 1933. The reason for this decline is not definitely known, but brood-parasitism by Brown-headed Cowbirds seems likely.

In fall, migrant Solitary Vireos have been noted from 6 September (1933, La Jolla, SD 30443) through early or mid-November; the end of fall migration is obscured by some individuals remaining into winter. Wintering birds occur mostly in the coastal lowland in riparian woodland, parks, and very rarely, residential areas. Winter reports farther inland are of one at Lake Henshaw on 20 February 1979 (AB 33:316, 1979), and one at Agua Caliente Springs in the Anza-Borrego Desert on 10 February 1977 (J. Dunn); another at Yaqui Well on 27 November 1963 (AFN 18:75, 1964) was possibly attempting to winter also. A few individuals are found in the county each winter, with a maximum of seven in 1977–1978 (AB 32:401, 1978). The daily maximum is three on the San Luis Rey River near Bonsall on 22 December 1979, with two farther downstream in Oceanside the same day (AB 34:656, 1980).

Subspecies: The birds breeding in the county, as well as most migrants and winter visitors, are *V. s. cassinii* Xantus. This form, identifiable by its yellowish flanks and olive back contrasting with grayish head, breeds in the Pacific states from southern British Columbia south to San Diego County, and in Idaho and Montana. *V. s. plumbeus* Coues has the back gray concolorous with the head and no yellow on the flanks. It breeds in the Great Basin and central and southern Rocky Mountain area, and has recently colonized the San Bernardino and San Gabriel mountains, where it mixes with, and has paired with *cassinii* (Johnson and Garrett 1974, AB 32:1210, 1978). In San Diego County, *plumbeus* is a very rare migrant and winter visitor in the coastal lowland, with seven reports during fall migration (earliest, one in the Tijuana River Valley on 16 September 1973, G. McCaskie), 10 in winter, and four in spring (latest, one at Old Mission Dam 15–22 April 1974, AB 28:853, 1974, and one at Point Loma on 22 April 1979, AB 33:806, 1979). An even later *plumbeus* was seen in the montane zone at Palomar Mountain on 10 May 1981 (R. Higson). All these "Plumbeous Vireos" have been noted since 1969, suggesting a change in the subspecies' migratory habits is accompanying the expansion in its breeding distribution. *V. s. solitarius* (Wilson), the form breeding in the boreal forest of Canada and northeastern United States, differs from *cassinii* by its darker gray head, olive-streaked flanks, and much whiter throat and breast. Nominate *solitarius* is a

casual vagrant to California, with four observations in San Diego County, three in the Tijuana River Valley (25–27 September 1971, J. Dunn and G. McCaskie; 29 September 1972, AB 27:123, 1973; and 10 November 1979, AB 34:202, 1980), and one at Point Loma (23 September 1980, AB 35:227, 1980). Although typical examples of these three races are easily distinguishable in the field, it must be mentioned that *plumbeus* and *solitarius* are as yet known in this county only from sight records.

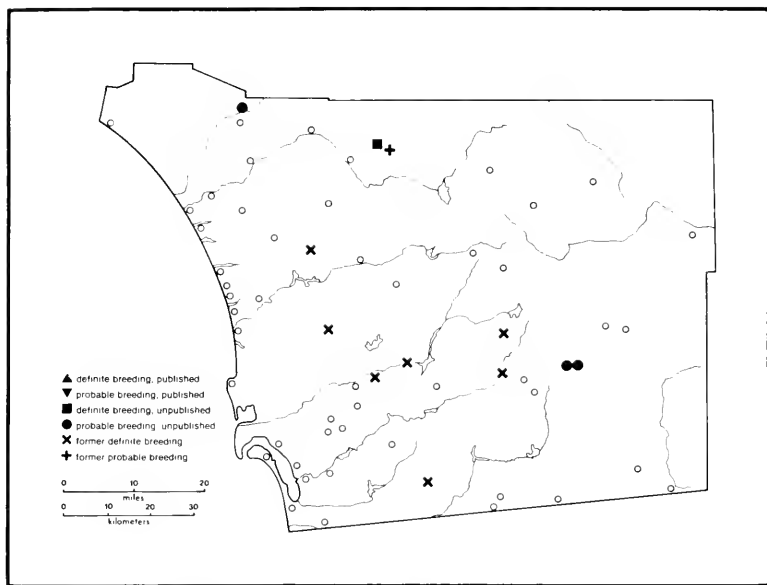
WARBLING VIREO

Vireo gilvus swainsonii Baird

Fairly common spring and fall migrant, rare summer resident, rare in early winter. Migrating Warbling Vireos may be seen in any habitat with trees or shrubs, and occur throughout the county, including the Anza-Borrego Desert. Spring arrival is usually in mid-March, with an early extreme of 8 March (1970, Point Loma, AFN 24:643, 1970). Substantial numbers have been noted early in the season (10 in the Borrego Valley on 9 March 1974, G. McCaskie), but the bulk of migrants does not pass through until late April and early May. A few can still be found in early June with late dates of 13 June and 22 June (1977, one at Point Loma on each date, P. Unitt).

Warbling Vireos occur regularly in summer only in the mixed coniferous-oak woodland of the mountains. Even here there are only three observations since 1970: one at Doane Pond, Palomar Mountain, on 27 June 1976 (J. Dunn), one at Mount Laguna on 24 July 1976, and a pair along Agua Dulce Creek, Laguna Mountains, on 25 June 1978 (P. Unitt). Formerly, the species was far more widespread and numerous, nesting in riparian and oak woodland in the coastal lowland and foothill zones. Blaisdell (in Belding 1890) called it a "common summer resident" at Poway, McGregor (1899), "common" on Palomar Mountain, and Dixon (in Willett 1933), "common" at Escondido. Egg dates (8), 13 May – 16 June. Two observations suggest Warbling Vireo may not yet be extirpated completely from lowland riparian woodland: one at Old Mission Dam on 23 July 1974 (D. Ramsey), and one on the Santa Margarita River at Sandia Creek, 6 May through 22 June 1980 (S. Goldwasser). Brood-parasitism by Brown-headed Cowbirds undoubtedly has caused the near demise of Warbling Vireo in San Diego County; Friedmann (1934) reported a parasitized nest found on 26 May 1921, and two are preserved at WF.

Fall migrants return in early or mid-August (earliest, 5 August 1973, Silverwood Wildlife Sanctuary) and are most numerous in September, with an exceptional 40 at Point Loma on 13 September 1978 (P. Unitt). Most have continued south by the end of October; the species is rare through November. One or two individuals have been noted annually in December in Balboa Park since 1975, and one was at Bonita on 17 December 1977 (R. Copper). One in Balboa Park on 21 December 1968 (AFN 23: 424, 1969) is the latest recorded straggler.

MAP 69. Breeding Distribution of Warbling Vireo (*Vireo gilvus*)

PHILADELPHIA VIREO

Vireo philadelphicus (Cassin)

Very rare fall vagrant, with 11 records between 19 September (1975, one at Point Loma, AB 30:128, 1976; and 1976, one in the Tijuana River Valley, AB 31:224, 1977) and 9 November (1969, one at Point Loma, AFN 24:100b, 1970). All birds have been noted at Point Loma (four) or in the Tijuana River Valley (seven). Two records are documented with specimens: 9 October 1965, Tijuana River Valley (McCaskie 1968b, SD 35511), and 9 November 1969, Point Loma (cited above, SD 37390).

RED-EYED VIREO

Vireo (olivaceus) olivaceus (Linnaeus)

Very rare vagrant in fall, between 9 September (1970, one in the Tijuana River Valley, AB 25:110, 1971) and 3 November (1974, one at the same locality, AB 29: 123, 1975). Of the 13 fall records, seven are for the Tijuana River Valley, four for Point Loma, one for Otay Mesa, and one for San Diego (residential area). Three are documented with specimens: 6 October 1914, San Diego (Huey 1915a, SD 33177), Tijuana River Valley, 19 October 1962 (McCaskie and Banks 1964, SD 30468), and same locality, 10 October 1964 (McCaskie 1968b, SD 35098).

The species is accidental in late spring, with two sight records: one in the Tijuana River Valley on 5 June 1979 (AB 33:806, 1979), and one at Kit Carson Park on 17 May 1980 (AB 34:931, 1980).

Subspecies: McCaskie and Banks (1964) reported that R. C. Laybourne had identified their specimen as "*V. o. caniviridis* Burleigh." Usually all North American breeding Red-eyed Vireos are considered a single subspecies *olivaceus*, with *caniviridis* as a synonym. Monson and Phillips (1981) have revived *caniviridis*, however.

YELLOW-GREEN VIREO

Vireo (olivaceus) flavoviridis (Cassin)

Casual fall vagrant from west Mexico, six records (all single individuals): in the Tijuana River Valley on 23 September 1967 (AFN 22:91, 1968), at San Diego on 7 October 1967 (SD 36247), in the Tijuana River Valley 19–20 September 1974 (AB 29:123, 1975), near the mouth of the Otay River on 25 October 1976 (AB 31:224, 1977), at Point Loma 15–19 October 1977 (AB 32:262, 1978), and at the same locality on 13 September 1978 (AB 33:216, 1979).

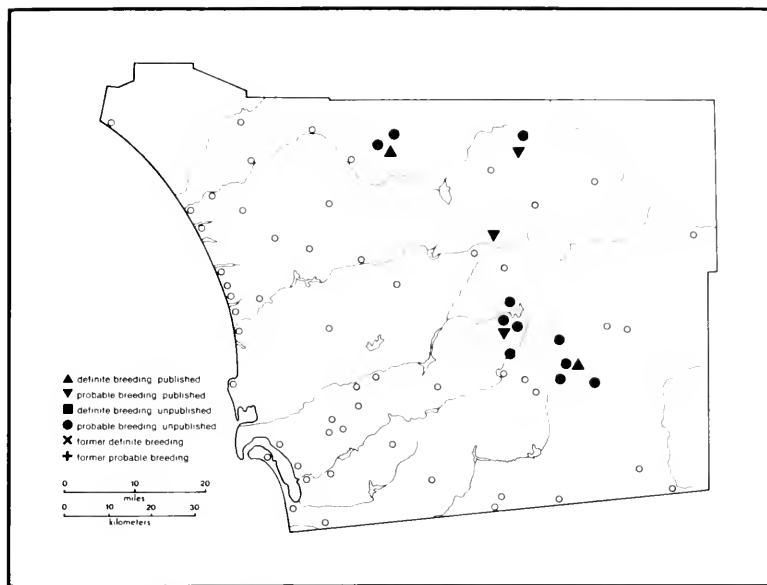
Typical Tits

Family *Paridae*

MOUNTAIN CHICKADEE

Parus gambeli baileyae Grinnell

Very common resident. The Mountain Chickadee is the most common resident bird of the mixed coniferous-oak woodland of the montane zone of San Diego County. Its

MAP 70. Breeding Distribution of Mountain Chickadee (*Parus gambeli*)

breeding range is coextensive with this habitat, covering Palomar, Hot Springs, Volcan, Cuyamaca, and Laguna mountains. Egg dates (3), 28 May – 24 June; Willett (1933) reports eggs taken in the Laguna Mountains 20 May – 9 June.

Mountain Chickadees are also rare to uncommon winter visitors to riparian and oak woodlands and parks in the foothills and coastal lowland. They are more numerous in winter in northern San Diego County, and are noted annually on the Oceanside Christmas Bird Count, with a maximum of 12 on 31 December 1977 (AB 32:875, 1978). In southern coastal San Diego County chickadees are rare, with a maximum of only three, as in Balboa Park on 6 November 1966 and in Presidio Park on 20 December 1970 (G. McCaskie). Dates of occurrence for this area extend from 10 September (1965, Point Loma, AFN 20:92, 1966) to 19 March (1978, one at Presidio Park, P. Unitt).

Dam (many observations, but none in May or June—possibly not breeding, D. Ramsey), San Marcos (SD), and San Onofre (one on 28 March 1906, Dixon 1906). Points on the eastern edge of their range are Hot Springs Mountain (Unitt 1981), La Puerta (=Mason) Valley (SD), and 5.6 km (3.5 miles) east of Boulevard (26 June 1978, P. Unitt). Egg dates (28): 10 April – 28 May. Outside this range, closer to the coast, Plain Titmice are rare winter visitors to parks and riparian woodland. Dates of occurrence near the coast are 2 October (1975, Point Loma, AB 30:128, 1976) to 16 April (1973, Balboa Park, P. Unitt). There are a few reports of wanderers to the Anza-Borrego Desert, east to Yaqui Well (27 November 1970, AB 25:110, 1971; 22 November 1980, AB 35:227, 1981) and Lower Willows in Coyote Creek Canyon (11 November 1975, AB 30:128, 1976; March–April 1981, A. Morley).

PLAIN TITMOUSE

Parus inornatus transpositus (Grinnell)

Common resident. The breeding distribution of the Plain Titmouse corresponds closely to the distribution of oak trees. The birds are common in oak-dominated woodland, uncommon in riparian or coniferous woodland in which oaks are a minority of the trees. Titmice occur throughout the foothill and mountain zones, and down into the coastal lowland as far as Jamacha (six on 13 December 1978, P. Unitt), Santee (eggs taken 2 May 1897, WF), Old Mission

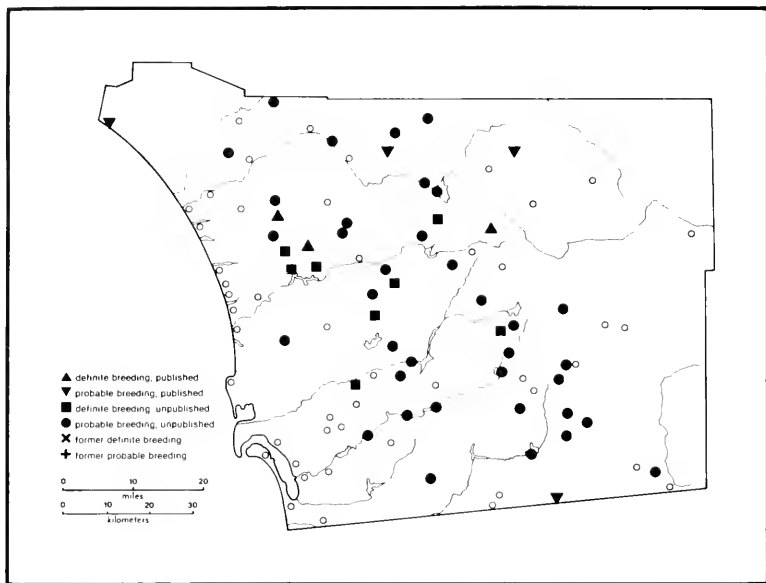
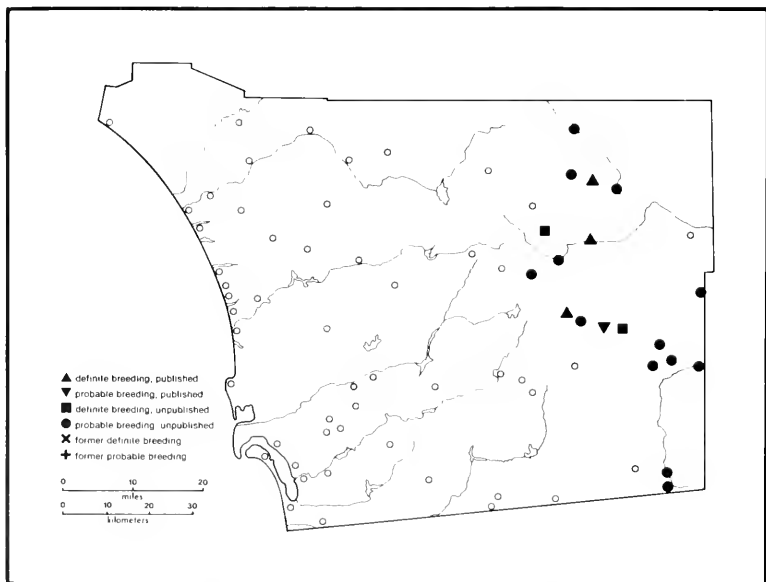
Verdin, etc.

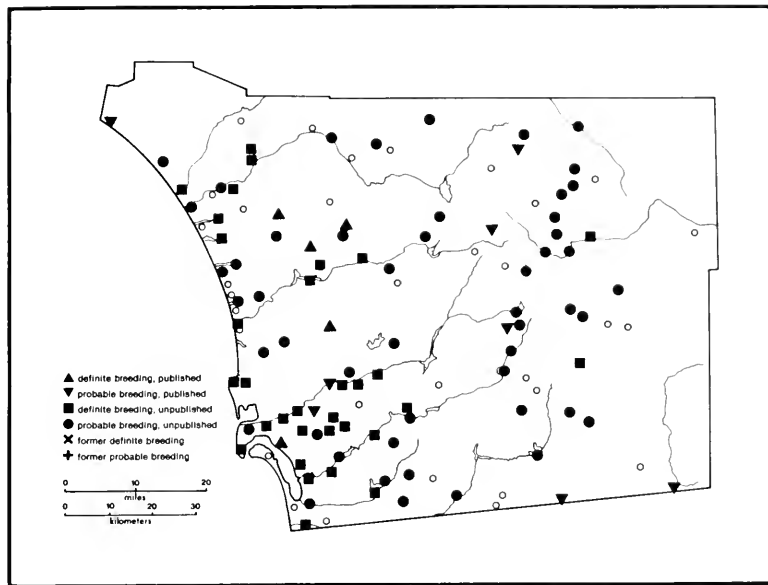
Family Remizidae

VERDIN

Auriparus flaviceps acaciaram Grinnell

Common resident in desert wash and desert-edge scrub throughout the Anza-Borrego and as far west as 1.6 km (1 mile) east of Banner (one on 6 May 1978, P. Unitt) and Jacumba (one on 13 July 1974, J. Dunn; one collected on

MAP 71. Breeding Distribution of Plain Titmouse (*Parus inornatus*)MAP 72. Breeding Distribution of Verdin (*Auriparus flaviceps*)

MAP 73. Breeding Distribution of Bushtit (*Psaltirparus minimus*)

30 November 1980, A. M. Rea and T. Ijichi, SD 41265). Their bulky, ball-shaped nests are a common sight in mesquite thickets and paloverde trees. Egg dates (16): 21 March – 23 April.

From 1962 through 1975 Verdins were noted regularly as uncommon fall and winter visitors in dense brush in the Tijuana River Valley. Dates extended from 12 September (1964, AFN 19:80, 1965) to 14 February (1965, G. McCaskie). For unknown reasons the birds have not appeared since 1975. There are two reports of vagrants at other localities: one near Chula Vista on 22 January 1956 (AFN 10:284, 1956), and one at San Elijo Lagoon from 9 January to 17 February 1975 (AB 29:743, 1975).

Subspecies: The four specimens from San Diego County match the pale-backed race *acaciurum*, resident in southeastern California, western Arizona, and extreme northeastern Baja California, not the darker *A. f. flariceps* (Sundevall) from farther south in Baja California.

Bushtit, etc.

Family *Aegithalidae*

BUSHTIT

Psaltirparus minimus minimus (Townsend)

Very common resident, foraging in flocks of about 20 to 40 individuals when not nesting. Bushtits thrive in a wide

variety of habitats: chaparral, riparian, oak, and piñon-juniper woodland, parks, residential areas, and desert-edge scrub. They occupy montane coniferous-oak woodland and desert wash scrub uncommonly and locally. The range of the species covers the entire coastal slope of the county, and extends east into the Anza-Borrego Desert as far as Lower Willows, Coyote Creek Canyon (30 on 11 November 1975, J. Dunn), Yaqui Well (two at nest on 24 March 1981), Vallecito Mountains (10 on 15 April 1978, P. Unitt), and Jacumba (Grinnell and Miller 1944). Egg dates (54): 18 March – 15 June.

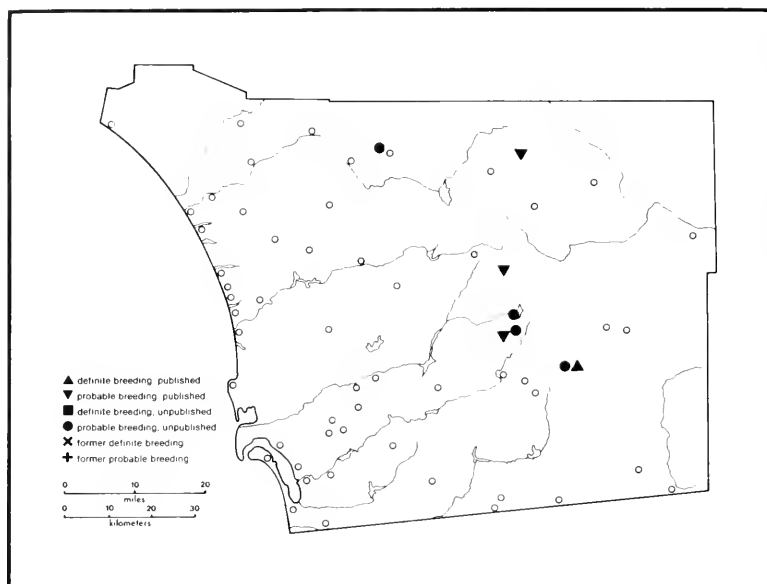
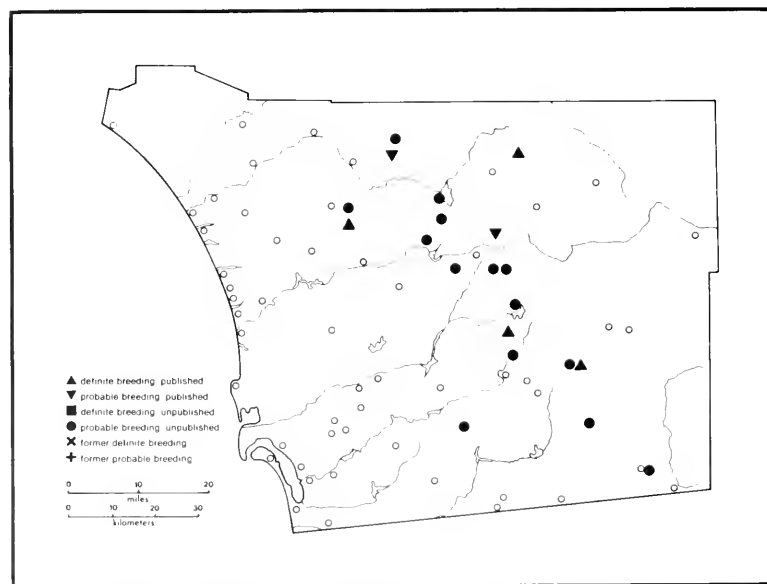
Nuthatches

Family *Sittidae*

PYGMY NUTHATCH

Sitta pygmaea Vigors subsp.

Fairly common to common resident in montane coniferous woodland. While Pygmy Nuthatches occur throughout this habitat in San Diego County, they show a definite preference for dry, open forest with tall ponderosa and Jeffrey pines, few oaks, and little underbrush. As a result, they are most common in the Laguna Mountains (35 on 21 January 1978), somewhat less numerous in the Cuyamacas (up to 20 between Paso Picacho and Cuyamaca Peak on 29 July 1978), uncommon on Hot Springs Mountain (three on 4 June

MAP 74. Breeding Distribution of Pygmy Nuthatch (*Sitta pygmaea*)MAP 75. Breeding Distribution of White-breasted Nuthatch (*Sitta carolinensis*)

1980), and rare on Palomar (two on 16 July 1978, P. Unitt). Egg dates (7): 14 May – 1 June.

Pygmy Nuthatches are also very rare and irregular winter visitors to parks in the coastal lowland. Two major irruptions have been noted, in 1966–67 and 1972–73. In the first of these winters, a maximum of 25 was recorded on Point Loma on 25 November 1966; in the second, 15 were there on 5 November 1972 (G. McCaskie). Seven records for other years mainly are of single individuals. Lowland occurrences span the period 30 August (1970, two at Point Loma, AB 25:110, 1971) to 30 May (1966, one at Point Loma, AFN 20:546, 1966).

Subspecies: The breeding race in San Diego County is the longer-billed *S. p. leuconucha* Anthony, which occurs from the San Jacinto Mountains south to the Sierra San Pedro Martir. The one lowland specimen (Point Loma, 3 September 1965, SD 35442) has a bill only 15 mm long, and therefore represents the shorter-billed *S. p. melanotis* van Rossem, which breeds throughout the Rocky Mountains and Sierra Nevada, south to the San Bernardino Mountains. This example illustrates a principle that montane birds in the lowlands are likely to be migrants from farther north, not downslope wanderers from the local population. It also illustrates the use of subspecies as a tool for learning about bird migration.

RED-BREASTED NUTHATCH

Sitta canadensis Linnaeus

Uncommon and very localized resident, irregularly rare to fairly common fall migrant, uncommon winter visitor. Red-breasted Nuthatches have a strong preference for coniferous trees, whether planted in parks and residential areas, or native in mountain woodland. In fall and winter, the species is usually found rarely to uncommonly in coastal park habitat, notably at Point Loma College and Fort Rosecrans Cemetery, Point Loma; Balboa and Presidio Parks, San Diego; and Buddy Todd Park and Rosierucian Fellowship, Oceanside. In occasional years, the birds are more numerous: 20 in Presidio Park on 17 November 1963; 30 at Point Loma on 5 November 1966 (G. McCaskie); 40 banded on Point Loma, fall 1969 (AFN 24:100b, 1970). Dates for non-breeders in the coastal lowland extend from 10 September (1963, 15 at Fort Rosecrans Cemetery, G. McCaskie) to 3 May (1974, one in Presidio Park, J. Dunn). There are two fall and winter records for the mountains, excluding Palomar (see below): Laguna Mountains, 6 March 1877 (SD 1584); one near Paso Picacho Campground, 17 October 1978 (P. Unitt); and two for the Anza-Borrego Desert: Vallecito, 2 October 1908 (Grinnell and Miller 1944); one at Tamarisk Grove Campground, 4 November 1973 (P. Unitt).

After the flight of 1963, Red-breasted Nuthatches established themselves as uncommon breeding residents on and near the campus of Point Loma College (AFN 20:546,

1966). This isolated colony has persisted through 1981. Normally the birds use the many pine and cypress trees in this area, but a pair was nesting in a hole in a sawed-off leaf base of a Canary Island date palm on 2 June 1978 (P. Unitt).

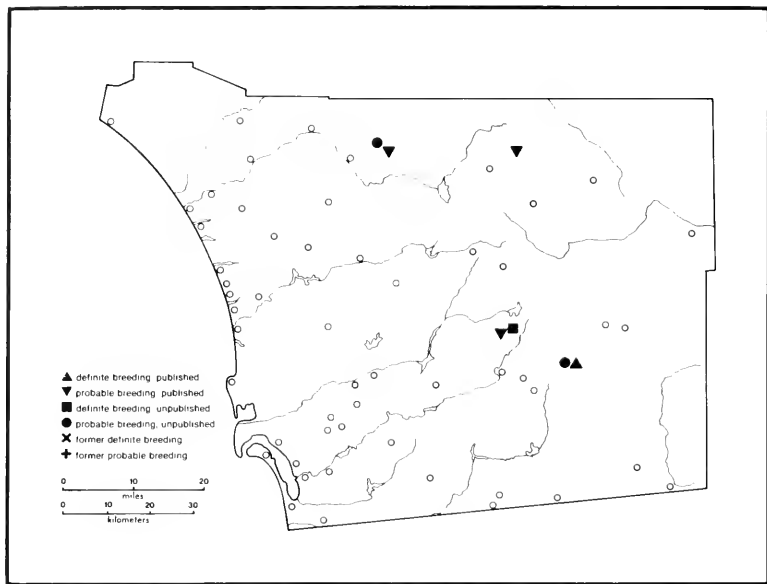
Red-breasted Nuthatches also breed rarely or sporadically on Palomar Mountain. A pair was reported nesting there in the summer of 1970 (AFN 24:718, 1970), and a pair was being followed by young at Palomar County Park on 14 July 1970 (E. Beemer). E. Beemer has also seen the species in the Palomar area on 29 September and 10 October 1941, and 14 November 1975. J. Dunn reported a single bird on 19 May 1975, and C. Edwards counted six at Palomar County Park on 24 August 1981. To the east, on Hot Springs Mountain, a Red-breasted Nuthatch was heard calling on 24 June 1980 (Unitt 1981), suggesting another possible breeding locality.

WHITE-BREASTED NUTHATCH

Sitta carolinensis aculeata Cassin

Fairly common resident. White-breasted Nuthatches are most characteristic of the mixed coniferous-oak woodland of the mountain zone in San Diego County. They probably breed locally also in oak woodland in the foothill zone, but definite evidence for this is scanty. Sharp (1907) reported the species nesting at Escondido Reservoir (= Lake Wohlford), elevation 380 m (1250 ft.). Observations of single individuals at Valley Center on 16 June 1979, near Black Canyon Campground and at Mesa Grande on 20 June 1980, of seven in oak woods just south of Lake Henshaw on 20 June 1980 (K. Weaver) and of one 1.6 km (1 mile) east of Boulevard on 26 June 1978 (P. Unitt), suggest breeding at those localities. Numerous other records for the foothill zone fall outside the nesting season. In the coastal lowland, the White-breasted Nuthatch is a rare fall and winter visitor to parks, riparian, and oak woodland, with dates extending from 14 July (1974, one at Old Mission Dam, P. Unitt) to 20 March (1976, one in San Diego area, G. McCaskie). Egg dates (4), 12 April – 24 May; Willett (1933) reports eggs taken in the Laguna Mountains as late as 29 May.

Subspecies: All seven White-breasted Nuthatches collected in San Diego County, six probable local breeding birds from the mountains, plus a migrant from Escondido (27 January 1935, SD 24134) are closest to *S. c. aculeata*, breeding from Washington south along the Pacific slope to the Sierra Juarez, northern Baja California. None has a bill or wings long enough to suggest *S. c. alexandrae* Grinnell of the Sierra San Pedro Martir, Baja California, or *S. c. nelsoni* Mearns of the Rocky Mountains. I find bill slenderness, the main characteristic Grinnell (1918) used to define *S. c. tenuissima* of the Great Basin region, difficult to evaluate, but the birds from San Diego County have rather pale backs, paler than either *tenuissima* or *nelsoni*.



MAP 76. Breeding Distribution of Brown Creeper (*Certhia familiaris*)

Creepers

Family *Certhiidae*

BROWN CREEPER

Certhia familiaris zelotes Osgood

Uncommon resident in montane coniferous-oak woodland, especially the denser, more humid, woodland where incense-cedars (*Libocedrus decurrens*) are numerous. These trees offer the loose bark underneath which creepers prefer to nest. The species occurs at least on Palomar Mountain (McGregor 1899; E. Beemer), Hot Springs Mountain (Unitt 1981), Cuyamaca Mountains (Grinnell 1915), and Laguna Mountains (Willett 1933). No eggs from San Diego County are preserved in WF, but Willett (1933) reported eggs taken in the Lagunas on 15 and 29 May 1920. A pair was building a nest at Paso Picacho, Cuyamaca State Park, on 24 April 1977 (P. Unitt).

The Brown Creeper is also a very rare winter visitor to parks, riparian and oak woodland in the coastal lowland. Lowland dates extend from 26 September (1974, two at Old Mission Dam, AB 29:743, 1975) to 19 February (1978, one at Wilderness Gardens County Park, P. Unitt), with an exceptional individual at Point Loma on 13 August 1970 (AFN 24:718, 1970). A. Morley noted one in the Anza-Borrego Desert at Tamarisk Grove Campground on 2 November 1973.

Subspecies: The breeding race of San Diego County, *C. f. zelotes* Osgood, occurs in the inner coast ranges of northern California, in the Sierra Nevada, and in the high mountains of southern California. No lowland specimens have been taken to determine the taxonomic status of winter vagrants. Possibly these are *C. f. montana* Ridgway of the Rocky Mountains and Great Basin, which has been recorded as close as the Colorado River in Riverside County, or even *C. f. americana* Bonaparte of northeastern North America, which has occurred several times in central Arizona.

Dippers

Family *Cinclidae*

NORTH AMERICAN DIPPER

Cinclus mexicanus Swainson

Casual vagrant; two records of nesting. Dippers require clear, fast-flowing, rocky streams, which are very few in San Diego County. Abbott (1927a) first definitely reported the species in the county with a pair nesting in August 1925 and on 20 June 1926 "on a falling stream of water in the Cleveland National Forest at about 3500 feet [1070 m] elevation;" the locality was not reported more exactly "for fear that the birds might be disturbed." The nest was collected on 27 June 1926 after the four young had fledged, and presented "with full data" to SD. Unfortunately, the

nest and its data appear to have been lost. The nest is no longer in SD, and is not in WF. Willett (1933) reported that J. B. Dixon collected a set of five eggs at about 790 m (2600 feet) on the San Luis Rey River on 25 May 1933. This set, or another taken nearby on the same day, is preserved as WF 754. E. Beemer has observed clippers three times on Pauma Creek: one on 4 May 1945, one on 8 December 1946, and two on 28 March 1954. On the second date the bird was at the low altitude of 370 m (1200 feet). A single bird was seen 16 June 1971 on Palomar Mountain along Doane Creek, just above where it meets French Creek to form Pauma Creek (AB 25:907, 1971). Most recently, A. Morley reported two on 27 November 1977 in Sheep Canyon and Cougar Canyon, intermittent streams flowing down the east slope of Hot Springs Mountain into Coyote Creek (AB 32:259, 1978).

Subspecies: *C. m. unicolor* Bonaparte breeds throughout the species' range in western North America, south to the Mexican border. No birds have been collected in San Diego County.

Wrens

Family Troglodytidae

CACTUS WREN

Campylorhynchus brunneicapillus couesi Sharpe

Uncommon and localized resident. Cactus Wrens are found in two distinct regions of San Diego County. They occur in desert wash scrub and desert-edge scrub in and near the Anza-Borrego Desert, ascending the east side of the mountains to about 910 m (3000 feet) elevation. Points on the upper edge of their range are 3 km (2 miles) east of Ranchita (one on 2 April 1977), San Felipe Valley (one on 2 February 1978), Earthquake Valley (one on 6 May 1978), and 5 km (3 miles) west of Jacumba (three on 26 June 1978). In the Vallecito Mountains, Cactus Wrens go even higher, to about 1220 m (4000 feet) (one on 15 April 1978, P. Unitt). Egg dates for the Anza-Borrego region (4): 11 March – 15 April.

Cactus Wrens inhabit the coastal lowland also, where they are restricted to thickets of cholla cactus in coastal sage scrub habitat. In 1981, the species is known to occur at very few localities. Places which are strongholds for coastal Cactus Wrens are San Pasqual (three on 17 April 1973, A. Fries; four on 22 March 1980, P. Unitt), hillsides on north side of San Elijo Lagoon (up to six on 2 March 1975, SEL surv.), and vicinity of Sweetwater Dam (up to five on 20 December 1980, W. T. Everett).

Formerly, Cactus Wrens were far more common and widespread in the coastal lowland. Belding (1890) called the species rather common at San Diego; Emerson (1887), common at Poway; Sharp (1907), common at Escondido and San Pasqual; and Dixon (1906) found several pairs at

San Onofre. The bulky, conspicuous nests were frequent objects of egg collectors, but the true cause of the decline of Cactus Wren is urbanization. The sunny coastal mesas and hillsides formerly vegetated with sage scrub and cholla thickets are now mostly covered with houses. Few of the remaining localities still supporting Cactus Wrens can be considered safe from residential development.

Egg dates for the coastal lowland (42): 5 April – 22 June; an exceptionally early set was taken at San Diego on 14 March 1891, and a late one at San Pasqual on 10 July 1916 (WF).

The species is basically sedentary, but single vagrants have been seen out of typical habitat at Point Loma on 14 October 1967, and at Mission Bay on 14 February 1970 (G. McCaskie).

ROCK WREN

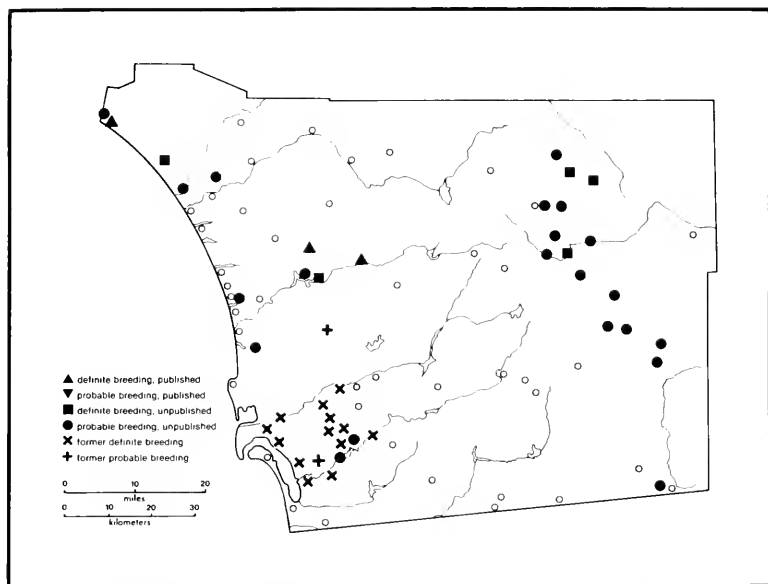
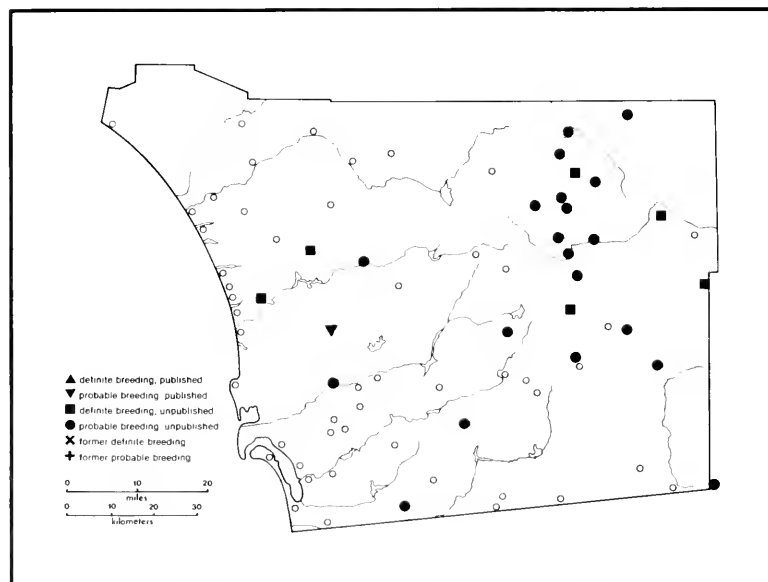
Salpinctes obsoletus obsoletus (Say)

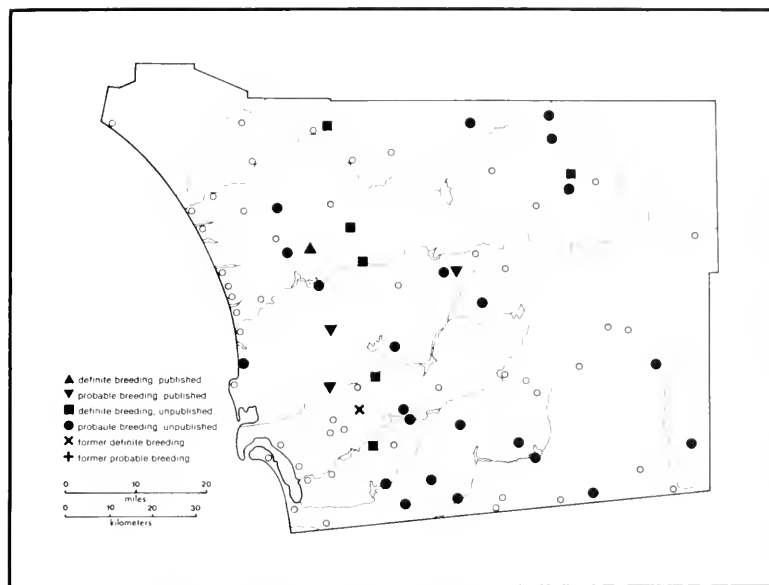
Common but localized resident (?), widespread uncommon winter visitor; true seasonal status obscure. Rock Wrens occur among rocky outcrops and hillsides, sandy sea bluffs, desert slopes, quarries, and even bare road cuts. Their tolerance of the most arid conditions and their migratory habits result in their being found at many more localities than the Cañon Wren, though the two species often occur together. In the immediate vicinity of the coast, the Rock Wren is known only as a winter visitor, with dates extending from 16 September (1978, one at Point Loma, C. Edwards) to 22 February (1975, one at the same locality, J. Dunn). At some places not far inland, however, the species breeds and may be seen at any time during the year: Escondido and Rancho Santa Fe (eggs in WF), Sweetwater Dam (eggs in SBCM), Poway ("resident," Blaisdell in Belding 1890), Old Mission Dam (noted in April, June, mid-July, D. Ramsey). Two near the summit of Cuyamaca Peak on 8 July 1978 indicate the species probably breeds up to the highest elevations in the county, and one at Mesa Grande on 5 November 1978 suggests it may winter up to the upper foothill zone. Rock Wrens are common only on the rocky slopes fringing the Anza-Borrego Desert: as many as 35 seen in a day on 24 March 1978 in extreme southwestern Imperial County near In-Ko-Pah County Park (P. Unitt). More information is needed to determine if such numbers are maintained throughout the year; indeed, far more data from all parts of San Diego County must be gathered before the distribution and migration of Rock Wrens in this region can be well understood. Egg dates (5): 6–25 April.

CAÑON WREN

Salpinctes mexicanus conspersus (Ridgway)

Uncommon resident, inhabiting rocky gorges and hillsides, and chaparral in which large boulders or rock outcroppings are interspersed. Most recorded localities are in the foothill zone and more interior sections of the coastal lowland.

MAP 77. Breeding Distribution of Cactus Wren (*Campylorhynchus brunneicapillas*)MAP 78. Breeding Distribution of Rock Wren (*Salpinctes obsoletus*)



MAP 79. Breeding Distribution of Cañon Wren (*Salpinctes mexicanus*)

Along the coast, the only place where Cañon Wrens have been noted is among the sandstone sea bluffs south of Torrey Pines State Reserve (one on 16 July 1974, three on 2 March 1976, J. Dunn). The uppermost elevations to which the species extends are about 910 m (3000 feet) at Lake Morena (three on 29 July 1971, J. Dunn) and about 975 m (3200 feet) on Cedar Creek on the west slope of the Cuyamaca Mountains (four on 4 February 1978, P. Unitt). Most of the Anza-Borrego Desert is too arid to suit Cañon Wrens, but they have been recorded at several localities along the east base of the mountains. A. Morley saw adults feeding young in Borrego Palm Canyon on 13 May 1973. Egg dates (29): 31 March – 13 May, exceptionally 11 July.

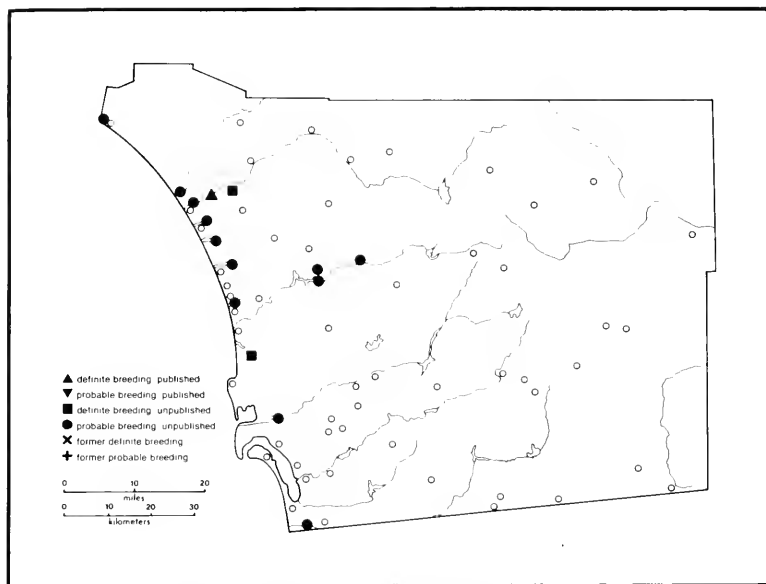
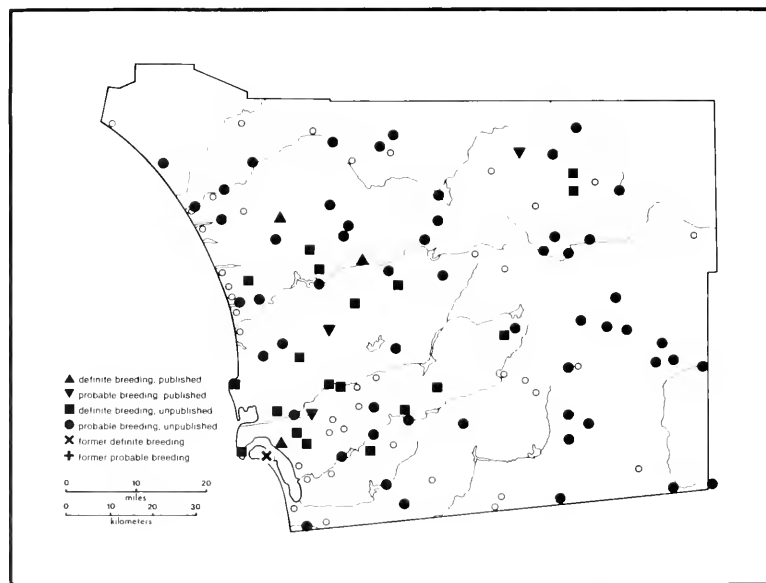
MARSH WREN

Cistothorus palustris (Wilson) subsp.

Common migrant and winter visitor; fairly common but localized breeding resident. In migration and winter, Marsh Wrens are found in any situation which combines dense low vegetation with standing water: tidal salt marsh, margins of brackish lagoons, lakes, ponds, and ditches where these are lined with cattails, bulrushes, or other dense plant growth in which the birds can conceal themselves. Migrating birds will stop in completely dry weedy underbrush. The species is widespread in the coastal lowland during migration and winter, but its status in other sections of the county is obscurely known. It occurs at least as a fall migrant at

Lake Henshaw, with an individual as late as 18 November in 1978. On the east slope of the mountains, Marsh Wrens occur at Scissors Crossing (one on 2 February 1978, P. Unitt), at the San Sebastian Marsh and Lower Willows in Coyote Creek Canyon (13 February 1973 and February 1981), and at Carrizo Marsh (19 January 1973; five on 24 March 1974, ABDSP file). Little information has been gathered on the timing of Marsh Wren migrations, but it appears that fall arrival is usually around early September, rarely as early as 14 August (1978, one in the Tijuana River Valley, P. Unitt). In spring, most of the birds depart in mid-April: 25 April (1965, San Diego area, G. McCaskie) is the latest reported date for a non-breeding locality.

During the breeding season, Marsh Wrens occur primarily in the north coastal region of the county. The species has been found in summer at every lagoon and creek mouth for which there is any information from San Mateo Creek (9 June 1978, S. Goldwasser) south to San Elijo Lagoon (53 on 2 June 1974, SEL surv.). The birds are also found inland along the San Luis Rey River (eight in Oceanside on 22 June 1977, P. Unitt) as far as Guajome Lake (many egg sets in WF). There is also an egg set collected at Sorrento on 30 May 1949 (SBCM), and one from "San Diego" (more precise locality not specified) on 4 June 1953. Marsh Wrens recently have colonized some other localities in the coastal lowland. K. Weaver has found up to three singing birds at Kit Carson Park, three around eastern Lake Hodges, and two in the San Pasqual Valley during June

MAP 80. Breeding Distribution of Marsh Wren (*Cistothorus palustris*)MAP 81. Breeding Distribution of Bewick's Wren (*Thryomanes bewickii*)

and July in 1978, 1980, and 1981. Early in this century, egg collectors spent much time in the Escondido and San Pasqual areas, but failed to find Marsh Wrens. David Povey noted singing birds in Mission Valley: four near the San Diego Stadium on 5 July 1978 and four just west of Interstate 805 on 21 May 1979. Marsh Wrens began summering in the Tijuana River Valley in 1980: one on 29 June 1980, two on 14 June 1981, one on 21 June 1981 (E. Copper).

Subspecies: A. M. Rea (pers. comm.) has recently studied geographic variation in the Marsh Wrens of the western United States, and the following information is based on his findings. He recognizes three races that reach San Diego County: *C. p. aestuarinus* (Swarth), a dark bird with a blackish crown, extensive black patch on the back with sparse, narrow white streaks, and deep rufous scapulars, rump, and flanks; *C. p. plesius* Oberholser, a larger and considerably paler bird with the back not so black and with broader white streaks, and the scapulars and rump plain brown, not rufous; and *C. p. pulverius* (Aldrich), a bit paler yet, with scapulars and rump a drab grayish brown, dark brown back with blurred white streaks, and a tan crown and nape. *Aestuarinus* breeds from coastal California east through the Central Valley and lower Colorado River Valley to southern Arizona; *pulverius* breeds from eastern Washington and eastern Oregon south to the Great Basin regions of northeastern California, Nevada, and possibly western Utah; *plesius* breeds east of *pulverius* in the Rocky Mountain region. All but one of the 19 specimens from San Diego County identified by Rea are migrants or winter visitors (September–February) of the two pale races. Four are *pulverius*, four are closest to *pulverius* but somewhat intermediate toward *plesius*, and ten are *plesius*. This indicates that the Marsh Wrens of the interior United States are highly migratory and reach San Diego County in large numbers, while *aestuarinus* breeding within California is relatively sedentary, and seldom if ever disperses south to San Diego County. Our local breeding population is presumably *aestuarinus* but no specimens of it have yet been collected. One specimen taken at the Tijuana River mouth on 7 December 1919 (SD 32688) is closest to *aestuarinus*, but is large for that race, and shows exceptionally bright rufous scapulars and rump; its subspecific relationships need further investigation.

BEWICK'S WREN

Thryomanes bewickii (Audubon) subsp.

Common resident in chaparral, piñon-juniper woodland, desert wash scrub; also in parks, riparian, sycamore, and oak woodland where these are adjacent to chaparral or mixed with underbrush. With such unrestrictive habitat requirements, the species is very widespread in San Diego County. It occupies the entire coastal slope, except the Coronado Peninsula where it nested in the 19th century (WF), but has evidently been eliminated by urbanization.

Bewick's Wrens also occur in mesquite thickets and among scattered junipers apparently wherever these are available in the Anza-Borrego Desert: common at Lower Willows, Coyote Creek Canyon; family group at Borrego Palm Canyon on 30 March 1973 (A. Morley); seven in the Borrego Sink on 24 March 1981; five at Carrizo Marsh on 6 May 1978; 10 in extreme southwest Imperial County on 24 March 1978; five each at Mountain Palm Springs and Vallecito on 5 September 1978 (P. Unitt). The species is most characteristic of the lowland and foothill zones, but occurs uncommonly or fairly commonly up to the highest elevations in the county on Hot Springs Mountain (Unitt 1981) and Cuyamaca Peak (three egg sets in WF). Egg dates (53): 19 March – 17 June.

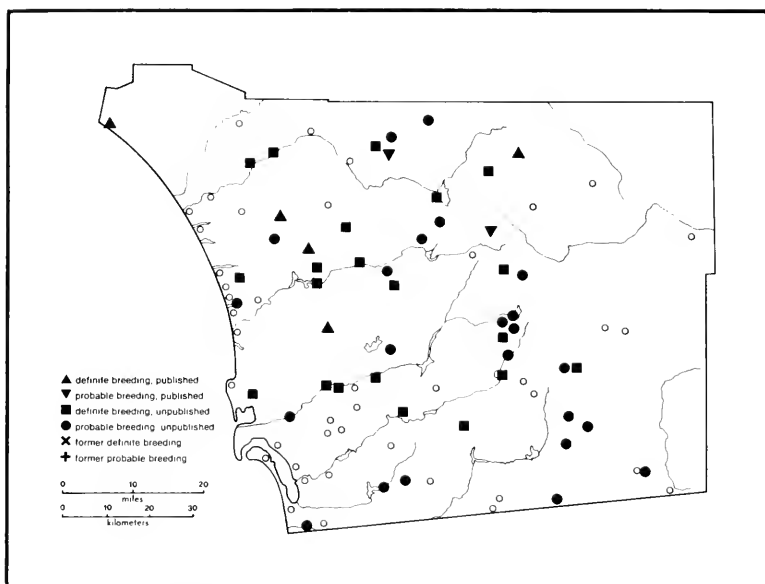
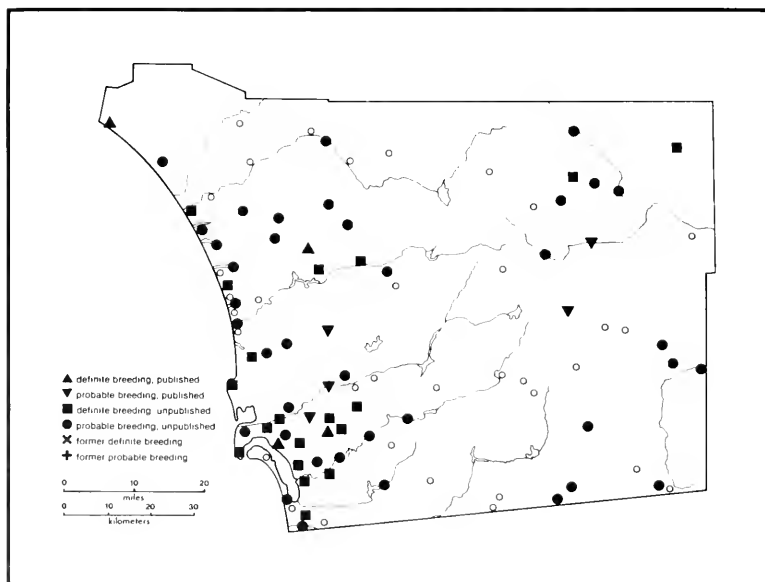
Subspecies: Amadeo M. Rea recently has studied the Bewick's Wrens in the SD collection. He identified 12 of the 17 specimens as the local breeding race, *T. b. charienturus* Oberholser (*T. b. correctus* Grinnell is a synonym according to Phillips et al. 1964). Three specimens are winter visitors of the subspecies *T. b. drymoeus* Oberholser from northern California (1 November 1914, La Mesa, 32621; 2 February 1930, San Diego, 41683; and 25 November 1934, Wynola, 32601), while two appear to be intergrades between *charienturus* and *T. b. eremophilus* Oberholser of the southern Great Basin and Rocky Mountain region (30 November 1913, La Puerta Valley, 32620 and 8 October 1974, Campo, 38934).

WINTER WREN

Troglodytes troglodytes (Linnaeus) subsp.?

Very rare winter visitor. Where they are common, Winter Wrens live in dense, damp forest undergrowth, but San Diego County records are from a variety of habitats including streamside brush, riparian woodland, residential areas, and dry weeds, as well as montane forest undergrowth. Always, however, the birds hide effectively in the densest vegetation, revealing themselves only by their distinctive double call note. Of the 18 records for the county, 11 are from the coastal lowland, three from the foothill zone, three from the mountains, and one from the Anza-Borrego Desert (one in Coyote Creek Canyon on 7 December 1977 and 16 February 1978, AB 32:400, 1978). Probably only the disproportionate amount of observer activity in the coastal lowland makes the species appear more numerous in that area. Most reports are of single individuals, but possibly as many as three were in the Tijuana River Valley in the fall of 1977 (AB 32:259, 1978). Dates extend from 10 October (1941, one at Palomar Mountain, Beemer 1949; 1964, one in the Tijuana River Valley, AFN 19:80, 1965; 1977, same locality, cited above) to 6 March (1949, two in Marion Canyon near Pala, Beemer 1949).

Subspecies: Unknown for lack of specimens. A. M. Rea (pers. comm.) has found that *T. t. pacificus* Bard as constituted in the A.O.U. Check-list (1957) is actually a composite of several subspecies.

MAP 82. Breeding Distribution of House Wren (*Troglodytes aedon*)MAP 83. Breeding Distribution of Northern Mockingbird (*Mimus polyglottos*)

HOUSE WREN

Troglodytes aedon parkmanii Audubon

Common spring migrant and summer resident; uncommon to fairly common fall migrant and winter visitor. The habitat requirements of breeding House Wrens encompass two needs: dense underbrush in which the birds can forage and take cover, and trees large enough to offer nest holes. Accordingly, the species inhabits riparian, sycamore, oak, and mixed coniferous-oak woodland, wherever these are mixed with or adjacent to shrubbery. The breeding range of the House Wren covers most of the coastal slope of the county, but the birds are localized and uncommon in the immediate region of the coast (San Elijo Lagoon, Tijuana River Valley). Easternmost breeding or probable breeding localities are Hot Springs Mountain (Unitt 1981), Mount Laguna (WF), Banner (15 on 15 April 1978), and 2 km (1 mile) east of Boulevard (one on 26 June 1978, P. Unitt). In the Anza-Borrego Desert, House Wrens are not known to breed, but have been noted as migrants between 30 March (1973, Hellhole Canyon, A. Morley) and 6 May (1978, one at Carrizo Marsh). On the coastal slope, the spring influx begins in late March (25 in Cameron Valley on 26 March 1978, P. Unitt). Egg dates (57): 14 April – 13 June.

House Wrens leave their breeding areas mostly during September. At the same time migrants, presumably from farther north, disperse through the coastal slope, reaching places where the species does not breed. At Point Loma, one of these places, it has been noted as early as 21 August (1979, C. Edwards). House Wrens also occur in the Anza-Borrego Desert again in fall, probably uncommonly; one at Mountain Palm Springs on 5 September 1978 (P. Unitt); one in the Borrego Valley on 10 November 1968 (G. McCaskie). In winter the species occurs in the coastal lowland in chaparral, parks, and any low brush or weedy growth. It also may occur rarely in-winter as high as the mountain zone, as Emerson (1887) reported taking one specimen on Volcan Mountain on 24 January 1884, and seeing another bird on 28 January.

Mockingbirds and Thrashers

Family Mimidae

GRAY CATBIRD

Dumetella carolinensis (Linnaeus)

Casual in fall and early winter. Four records: one seen in the Tijuana River Valley on 7 November 1964 was collected the following day (McCaskie et al. 1967b, SD 35095); one in Balboa Park on 16 December 1972 (P. Unitt); one at Point Loma 24–25 September 1976; another at Point Loma 17–18 October 1976 (AB 31:224, 1977).

Subspecies: Some taxonomists, including A. R. Phillips and A. M. Rea, recognize the western population breeding

from southwestern British Columbia and North Dakota south to eastern Arizona and New Mexico as a distinct subspecies *D. c. ruficrissa* Aldrich, characterized by a belly and crissum paler than in the eastern, nominate race. Rea (pers. comm.) examined the specimen from San Diego County and found it darker than two Gray Catbirds he collected in Minnesota in 1965 and 1966, indicating the San Diego bird is nominate *carolinensis*.

NORTHERN MOCKINGBIRD

Mimus polyglottos polyglottos (Linnaeus)

Common resident in parks, residential areas, agricultural areas (especially orchards), desert wash scrub, and broken chaparral or woodland edges where there are berry-producing plants such as toyon (*Heteromeles arbutifolia*) and elderberry (*Sambucus* spp.). The species is widespread in the coastal lowland, and occurs at many places in the foothill zone as well. In the montane zone however, there are only two reports: one at Julian on 13 May 1884 (N. S. Goss in Belding 1890), and one in Cuyamaca Rancho State Park on 20 August 1954 (AFN 9:59, 1955). On the east slope of the mountains and in the Anza-Borrego Desert Mockingbirds are again fairly common, occurring mostly around creeks, springs, and human habitation or campgrounds. Egg dates (42): 27 March – 7 August.

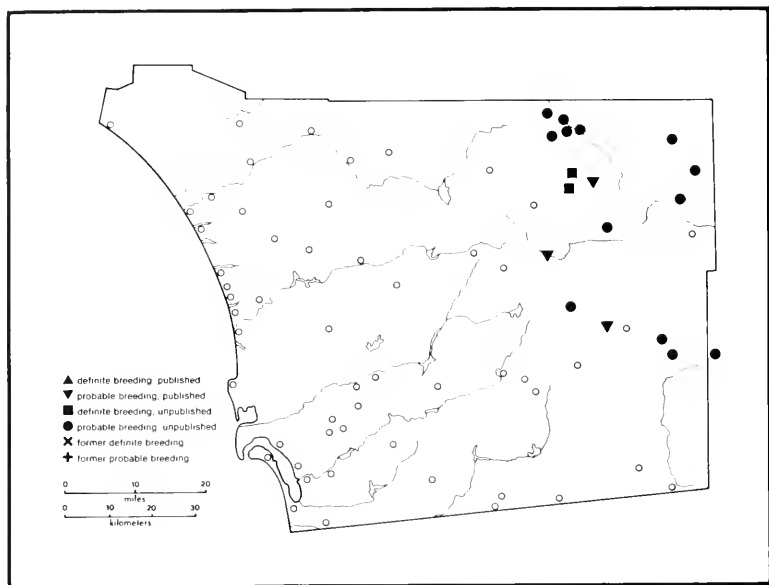
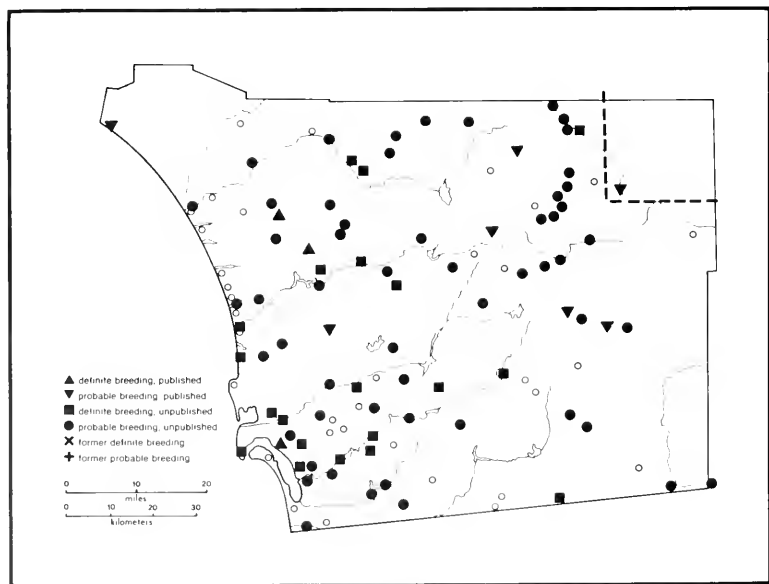
Mockingbirds have adapted very well to man-made changes in the environment. They are now more numerous in orchards and residential areas than in any natural habitat, and undoubtedly have increased greatly since the county was first settled by Europeans.

Subspecies: *M. p. leucopterus* is a synonym of nominate *polyglottos* (Phillips et al. 1964; Mayr and Short 1970).

SAGE THRASHER

Oreoscoptes montanus (Townsend)

Rare fall migrant and winter visitor, uncommon spring migrant. Sage Thrashers occur generally in weedy brush, broken chaparral or sage scrub, desert and desert-edge scrub. The species has been found in two areas of San Diego County: the coastal lowland and the Anza-Borrego Desert. Records for the coastal lowland are all from the general vicinity of San Diego (Tijuana River Valley, National City, Point Loma, Balboa Park, Murray Dam), except one at Escondido (2 November 1955–9 January 1956, AFN 10:284, 1956) and one at Pauma Valley (14 January 1952, E. Beemer). Since 1930, coastal observations have been of only one or two individuals at a time, but formerly larger numbers occurred, at least occasionally. Huey (1924) collected three on 28 January 1921, 5 km (3 miles) east of National City, and four on 15 March 1923, 8 km (5 miles) east of National City. On the latter date, "Sage Thrashers were abundant on the mesa, and a great many could have been collected." Heermann (1859) "remarked it on several occasions in the environs of San Diego," and Baird (1858)

MAP 84. Breeding Distribution of Leconte's Thrasher (*Toxostoma lecontei*)MAP 85. Breeding distribution of California Thrasher (*Toxostoma redivivum*) southwest of the dashed line, and Crissal Thrasher (*T. crissale*) to the northeast.

listed two specimens collected there. Recorded dates for the coastal region span the period 18 September (1974, one in the Tijuana River Valley) to 10 April (1971, one at same locality, G. McCaskie).

In the Anza-Borrego Desert, and on its fringes, the Sage Thrasher is a rare winter visitor (Vallecito Valley, 28 January 1957, SD 35176; one at Yaqui Well on 3 January 1981, M. Jorgensen; one in San Felipe Valley on 2 February 1978, P. Unitt). By late February, spring migrants arrive (six, 16 km [10 miles] southeast of Agua Caliente Springs on 25 February 1973, G. McCaskie), and in March are widespread in the desert, though still uncommon (maximum, eight seen at Yaqui Well on 21 March 1975, J. Dunn). The latest recorded date for the Anza-Borrego Desert is 6 April (1973, one at Collins Valley, A. Morley), except for a straggler at Agua Caliente Springs on 4 June 1970 (A. Fries, AFN 24:718, 1970).

BROWN THRASHER

Toxostoma rufum (Linnaeus)

Casual vagrant from late fall to spring. Eight records (all of single individuals): reported on San Diego Christmas Bird Count, 29 December 1957 (AFN 12:242, 1958); in the Golden Hill section of Balboa Park from 25 November 1958 to 3 May 1959 (Morley 1959b; AFN 13:402, 1959); at a feeder in San Diego from 15 October 1965 to 5 January 1966 (McCaskie et al. 1967b); in downtown San Diego (on the grounds of the County Administration Building), 3–13 February 1972 (AB 26:656, 1972); at Point Loma, 5 April 1973 (AB 27:821, 1973); at Oceanside, 24 April 1973 (AB 27:821, 1973); at Point Loma, 15 May 1979 (AB 33:806, 1979); and at Pio Pico Park, 7 km (4.5 miles) west of Dulzura, 10 April 1981 (D. Povey).

Subspecies? For lack of specimens, not positively known, but presumably *T. r. longicauda* (Baird), which breeds in the western section of the species' range east to western Ontario and Kansas; all specimens from California and Arizona have been of this race.

BENDIRE'S THRASHER

Toxostoma bendirei (Coues)

Very rare fall migrant; casual winter visitor. Most of the 16 records of Bendire's Thrasher in San Diego County are from brushy or weedy places in the Tijuana River Valley. Other recorded localities are Solana Beach (27 August 1964, McCaskie et al. 1967b), San Diego (residential areas: 4 to 11 October 1973, AB 28:109, 1974; 27 November 1974, AB 29:123, 1975), and Point Loma (17 September – 12 October 1980, AB 35:227, 1981). Seasonally, the records are concentrated in October and November, with 27 August (cited above) being the earliest date. Four times the species has been noted in winter, all in the Tijuana River Valley: 21 December 1968 (AFN 23:522, 1969), 20 December 1969 (AFN 24:455, 1970), 8 November 1973–31 January 1974 (AB 28:109 and 693, 1974), and 17 December 1978–10

March 1979 (AB 33:315, 1979). One there on 4 April 1970 (AFN 24:645, 1970) may have been a spring migrant that did not winter locally. Two records, both from the Tijuana River Valley, are documented with specimens: 2 October 1964 (McCaskie et al. 1967b, SD 35096) and 21 December 1968 (cited above, CSULB 3742).

LECONTE'S THRASHER

Toxostoma lecontei lecontei Lawrence

Uncommon resident. Leconte's Thrashers are sparse inhabitants of desert washes and creosote bush scrub. They have been noted at several localities in the Anza-Borrego Desert, west to Salvador Canyon (June 1972), Cougar Canyon (two on 28 May 1973, A. Morley), Borrego Palm Canyon (eggs in WF), Hellhole Bajada (adults feeding two young on 16 April, 1973, A. Morley), and La Puerta (=Mason) Valley (23 June 1927, SD 3006), and Palm Spring (several observations, such as one on 2 April 1977, G. McCaskie). F. Stephens found Leconte's Thrasher in the San Felipe Valley in late August 1911 (Willett 1912 and Stephens 1919a). The birds are always shy and difficult to locate. Egg dates (6): 22 February – 25 April.

CALIFORNIA THRASHER

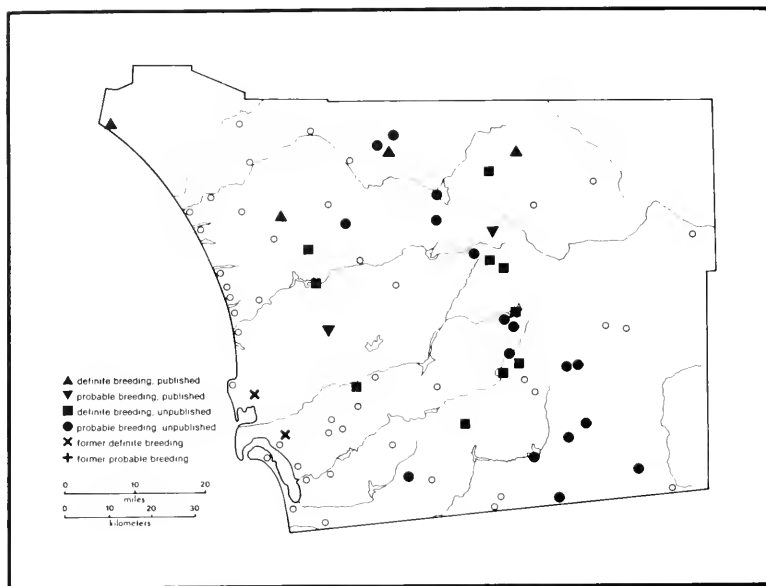
Toxostoma redicivium redicivium (Gambel)

Fairly common to common resident. California Thrashers are closely associated with chaparral. They visit parks, residential and agricultural areas, and various woodland habitats temporarily where these are adjacent to chaparral. On the fringes of their range, these thrashers inhabit mesquite thickets and other dense scrub in desert washes. The species' range in San Diego County covers the entire coastal slope except the Coronado Peninsula. On the eastern slope, California Thrashers extend uncommonly down to the base of the mountains in the Anza-Borrego Desert. Points on the eastern edge of the range are Lower Willows in Coyote Creek Canyon (two on 11 November 1975, J. Dunn), Borrego Palm Canyon, Culp Valley, Yaqui Well (ABDSP file and many other observations), Vallecito (Grinnell and Miller 1944; five on 5 September 1978, P. Unitt), Agua Caliente County Park (one on 21 March 1975, J. Dunn), and extreme southwestern Imperial County (three on 18 March 1978, P. Unitt). California Thrashers are most numerous in the coastal lowland and foothill zones, but extend fairly commonly into montane chaparral with records for Palomar Mountain (10 on 17 September 1978), Hot Springs Mountain (two on 4 and 24 June 1980, Unitt 1981), and Volcan Mountain (Emerson 1887). Egg dates (52): 9 February – 10 June; Sharp (1907) reported 13 June.

CRISSAL THRASHER

Toxostoma crissale Henry

Uncommon resident, confined to mesquite thickets in the Borrego Sink, 5–8 km (3–5 miles) southeast of Borrego Springs. The species was first reported from this locality

MAP 86. Breeding Distribution of Western Bluebird (*Sialia mexicana*)

by Stott and Sams (1959), with four observed on 12 December 1958. In recent years, Crissal Thrashers have been noted regularly when searched for at this locality in March and April, with up to three on 10 April 1976 (G. McCaskie). The birds are very shy and inconspicuous, keeping well hidden in the dense mesquite. Reports from Yaqui Well (Stott and Sams 1959) and Vallecito (AFN 13:456, 1959) represent misidentified California Thrashers; the two species are strictly allopatric.

Subspecies: No specimens, but presumably *T. c. coloradense* van Rossem, which occurs in southeastern California and the Colorado River valley. Phillips et al. (1964) and Hubbard (1976) argued for use of the name *crissale* rather than *dorsale*, since application of *dorsale* to this species was based only on a printer's error.

Thrushes

Family Turdidae

WESTERN BLUEBIRD

Sialia mexicana occidentalis Townsend

Common to very common resident and winter visitor. The Western Bluebird is a bird of edge habitats. It prefers oak savanna or coniferous or oak woodlands where these adjoin meadows or grassland. It occupies sycamore groves, riparian woodland edges, and parks uncommonly or rarely for

breeding, but more extensively in winter. The species' habitat requirements combine the need for trees supplying lookout perches and nest holes with open country for foraging. Western Bluebirds occur throughout the year in the foothill and mountain zones. The largest numbers are noted in winter (40 at Lake Cuyamaca on 21 January 1978, 100 at Lake Henshaw on 2 February 1978, P. Unitt), suggesting an influx of birds from north of San Diego County. The species is also resident in the more inland parts of the coastal lowland, breeding west to Santee (WF), Poway (Belding 1890), Lake Hodges and Escondido (WF), Twin Oaks Valley (Merriam 1896), and reaching the coast in the extreme north at San Onofre (nest with young on 30 May 1905, Dixon 1906). Reports of nesting in Rose Canyon (eggs on 4 June 1915) and Balboa Park (well-grown young in nest on 10 July 1926; juvenal found dead on 29 July 1922; fledglings on 3 June 1926, Abbott 1927d) do not represent the present breeding range of the species. Egg dates (13): 1 May – 12 June.

In much of the coastal lowland, the Western Bluebird is a fairly common to common winter visitor, with as many as 60 in Oceanside on 31 December 1977 (P. Unitt). The species becomes less and less numerous as a winter visitor as one proceeds south along the coast. It is uncommon to fairly common in parks and cemeteries in central San Diego and in Rancho Olay, but there is only one report for Point Loma (one on 18 December 1976, C. Edwards) and none

for the Tijuana River Valley. In the Anza-Borrego Desert, Western Bluebird is also a fairly common winter visitor to parks, agricultural land, and desert wash scrub with mistletoe. Dates for this area extend from 23 September (1956, "flocks" at Blair Dry Lake, ABDSP file) to 9 April (1978, 10 at Yaqui Well) and 15 April (1978, three in Earthquake Valley, possibly a breeding locality?; P. Unitt).

MOUNTAIN BLUEBIRD

Sialia currucoides (Bechstein)

Irregularly uncommon to very common but localized winter visitor. Mountain Bluebirds are found in open grassland, agricultural land, desert and desert-edge scrub. The species has been recorded in all regions of San Diego County, but is perhaps most frequent in the foothill zone, where a maximum of 150 was noted in Warner Valley on 1 November 1980 (C. Edwards). In the Anza-Borrego Desert, up to 30 were seen at Collins Valley 24–26 November 1974 (ABDSP file). Mountain Bluebirds occasionally occur in parks in the coastal lowland (50 on Otay Mesa on 19 January 1974, J. Dunn; 81 in Rancho Otay, a regular locality, on 17 December 1977, R. C. Smith), but are usually rare to uncommon in this area. Dates of occurrence span the period 1 November (1980, cited above) to 4 April (1884, one at San Diego, Belding 1890).

TOWNSEND'S SOLITAIRE

Myadestes townsendi townsendi (Audubon)

Rare migrant and winter visitor; accidental in summer. Townsend's Solitaires have been noted in many situations in San Diego County: parks, agricultural areas, various woodland habitats, desert wash scrub. They are probably most frequent in the mixed coniferous-oak woodland in the mountains, but records come from all zones in the county, from the immediate vicinity of the coast (many reports from Point Loma) to the Anza-Borrego Desert (one near Yaqui Well on 17 January 1959, AFN 13:324, 1959; three in Borrego Palm Canyon on 1 March 1966, AFN 20:460, 1966). Very rarely is more than a single individual noted at a time; the maximum is three. Seasonally, Townsend's Solitaires occur usually from mid-October to late March. Extreme records are 29 September (1973, one at Point Loma, AB 28:109, 1974) and 18 April (1981, one at Point Loma, D. Parker), excluding an exceptionally late bird in the Tijuana River Valley on 24 May 1963 (AFN 17:435, 1963). The single summer report is of one bird at the Palomar Observatory on 19 July 1980 (AB 34:931, 1980). The normal summer range of the Townsend's Solitaire extends south to the San Jacinto Mountains in Riverside County.

VARIED THRUSH

Zoothera naevia (Gmelin) subspp.

Irregularly rare to fairly common winter visitor. Varied Thrushes are most numerous in coniferous-oak woodland

in the mountains, where numbers as high as 16 in a day (Agua Dulce Creek, Laguna Mountains, 17 January 1978, C. Edwards) have been observed during flight years. The species is at best uncommon, and is usually rare, in oak woodland, riparian woodland, and parks in the foothill and coastal lowland zones. There are only two reports from the Anza-Borrego Desert: one in Coyote Creek Canyon and another at Tamarisk Grove, both on 19 February 1978 (B. Cord). In some years Varied Thrushes do not reach San Diego County at all, and the birds are rare except in occasional flight years, such as 1906–07, 1924–25, 1972–73, and 1977–78. Known dates of occurrence extend from 13 October (1977, one in the Tijuana River Valley, B. Cord) to 16 April (1973, "few" in Nigger [= Jaybird] Creek Canyon, E. Beemer).

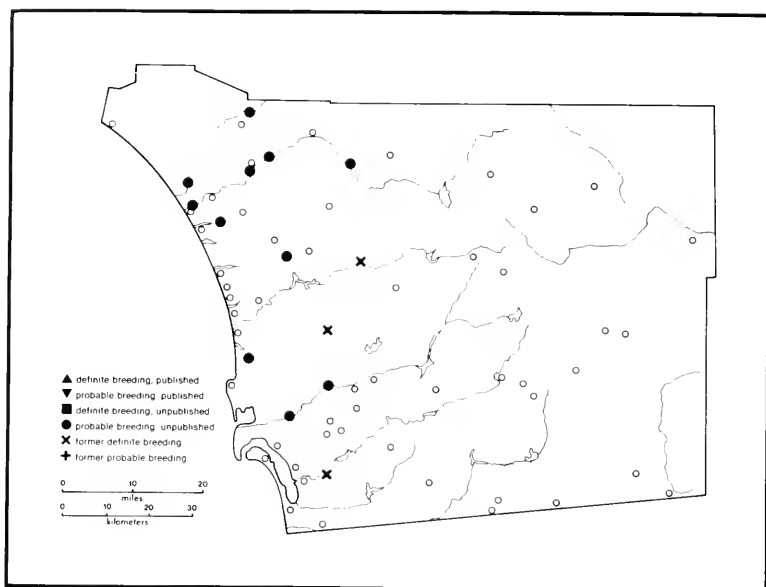
Subspecies: Two races of Varied Thrush are distinguished by the coloration of females: browner nominate *Z. n. naevia* breeding from southeastern Alaska south along the coast to Humboldt County, and grayer *Z. n. meruloides* (Swainson), breeding from northern Alaska and northwestern Mackenzie south, east of the Cascade Range to northeastern Oregon and northwestern Montana. Of the nine female Varied Thrushes from San Diego County in SD, five are *meruloides*, two seem intermediate, and two are *naevia* (San Diego, 4 February 1916, SD 1888, and Point Loma, 15 February 1936, SD 17172).

SWAINSON'S THRUSH

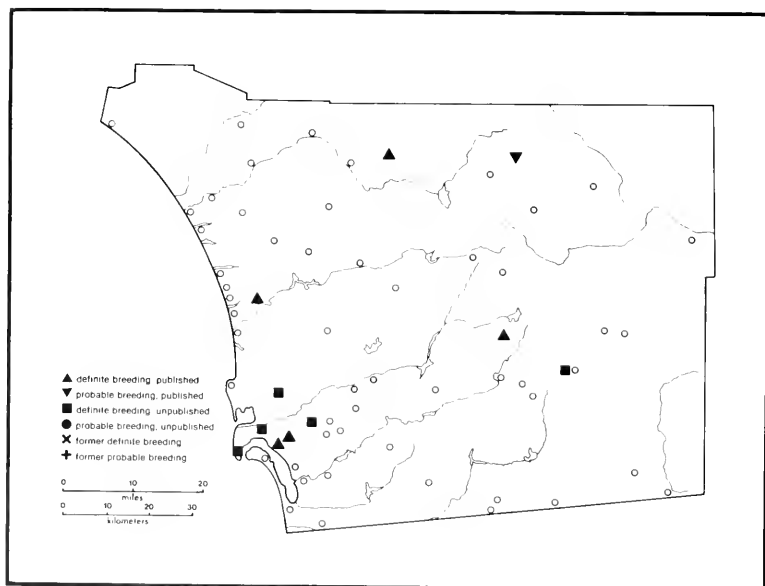
Catharus ustulatus (Nuttall) subspp.

Fairly common spring and fall migrant, rare and localized summer resident. Migrating Swainson's Thrushes stop in any habitat where they can find dense undergrowth: parks, residential shrubbery, chaparral, and woodland habitats with underbrush. They prefer damp and shady situations. The species is most numerous in the coastal lowland, but also occurs uncommonly in the foothill and mountain zones, and is fairly common at least in spring in the Anza-Borrego Desert. Spring migrants occur usually from late April to early June. Exceptional early dates are 2 April (1966, one banded in the Tijuana River Valley, AFN 20: 460 and 545, 1966) and 6 April (1978, two at Old Mission Dam, AB 32:1053, 1978; 9 June (1977, one at Point Loma, P. Unitt) is the latest recorded date for a migrant. In fall, Swainson's Thrushes occur at least from late August (earliest, one fat female of the migrant race *C. u. ustulatus* collected near San Marcos on 26 August 1972, AMR 4094) to mid-October (late, San Diego, 29 October 1927, SD 11638). Two exceptionally late stragglers have been noted in December: San Diego, 1 December 1964 (SD 35141); and Coronado, 15–16 December 1979 (AB 34:308, 1980). The bird in Coronado had an injured wing, probably accounting for its remaining so late. The record "13 December" of AFN 20:460, 1966, is an error for 1 December.

In summer, Swainson's Thrushes are confined to riparian woodlands in the coastal lowland. Recent summer reports



MAP 87. Breeding Distribution of Swainson's Thrush (*Catharus ustulatus*)



MAP 88. Breeding Distribution of American Robin (*Turdus migratorius*)

are from the lower Santa Margarita River (one on 29 June 1978), Santa Margarita River 3 km (2 miles) northeast of Fallbrook (two on 22 June 1980, S. Goldwasser), lower San Luis Rey River in Oceanside (two on 22 June 1977, P. Unitt), San Luis Rey River 5 km (3 miles) northeast of Bonsall (one on 12 June 1978, S. Goldwasser; one on 16 July 1978, P. Unitt), Pauma Valley (one on 24 July 1953 and 16 June 1970, E. Beemer), lower Buena Vista Creek in Carlsbad (one on 26 June 1980), near Harmony Grove (one on 1 July 1978, K. Weaver), Sorrento Valley (three on 26 June 1978, S. Goldwasser), Old Mission Dam (one on 14 July 1974), and Mission Valley between Interstate Highway 15 and Fairmount Avenue (one on 29 June 1975, two on 5 July 1975, P. Unitt). The local breeding population has undoubtedly declined with widespread destruction of riparian woodland. Historic localities are Poway ("common summer resident; breeds here," F. E. Blaisdell in Belding 1890), San Pasqual, Mission Valley, and Bonita (WF). Egg dates (3): 31 May - 26 June.

Subspecies: Swainson's Thrushes occurring in San Diego County are "Russet-backed Thrushes," the *ustulatus* subspecies group breeding along the Pacific coast from southeastern Alaska to San Diego County. Within this group, two races have been distinguished: darker, more rufous *C. u. ustulatus* breeding in the Pacific northwest, and paler, grayer *C. u. oedicus* (Oberholser) breeding in California. Most migrants through San Diego County are probably *ustulatus*, while local breeding birds are presumably *oedicus*. However, SD has inadequate comparative material to permit an attempt at identifying individual specimens to race. A. R. Phillips identified as nominate *ustulatus* the specimen from San Luis Rey cited above.

HERMIT THRUSH

Catharus guttatus (Pallas) subspp.

Irregularly uncommon to common migrant and winter visitor, accidental in summer. Hermit Thrushes may be found in chaparral, riparian woodland, parks, and residential shrubbery, situations which combine dense plant cover with shady ground surface. The species disperses throughout the coastal slope, occurring even in the mountain zone in midwinter (two specimens 3 km [2 miles] southeast of Julian on 20 January 1924, SD 9221-2). In the Anza-Borrego Desert, Hermit Thrushes are found uncommonly during both migration and winter (ABDSP file). As with many frugivorous winter visitors, their abundance varies considerably from year to year, as illustrated by San Diego Christmas Bird Counts: 22 on 18 December 1976, 191 on 17 December 1977, 14 on 16 December 1978, and 101 on 15 December 1979. Seasonally, Hermit Thrushes occur generally from late September or early October to mid-April. Recorded extremes are 18 September (1974, one at Point Loma, J. Dunn) and 28 April (1973, one in Balboa Park, P. Unitt).

The single summer report is of a bird heard singing on a forested, shady, north-facing slope of Hot Springs Mountain on 24 June 1980 (Unitt 1981). The San Bernardino Mountains are the southern limit of the species' normal summer range.

Subspecies: Hermit Thrushes show considerable geographic variation in plumage color and size through their wide breeding range. Different taxonomists, however, have disagreed substantially on how to interpret this variation in terms of races and the names to apply to them; compare the A.O.U. (1957) with Phillips (1961) and Aldrich (1968). Most if not all the birds wintering in San Diego County originate in Alaska and British Columbia—the races *C. g. guttatus* (Pallas) and *C. g. nanus* (Audubon), using traditional A.O.U. names. The subspecies which breed farther south in the western United States tend to migrate east so they do not winter in coastal southern California. Specimens taken later in the spring might reveal one or more of these races occurring regularly on migration. The one April specimen (4 April 1877, Campo, SD 1701, Huey 1925) is *C. g. slevini* (Grinnell), which breeds in the coast region from Washington to central California, distinguished from the more northern forms by its paler color, shorter wing and tail, and longer bill. The summer bird on Hot Springs Mountain was presumably *C. g. sequoiensis* (Belding), the form breeding in the Sierra Nevada and south to the San Bernardino Mountains.

WOOD THRUSH

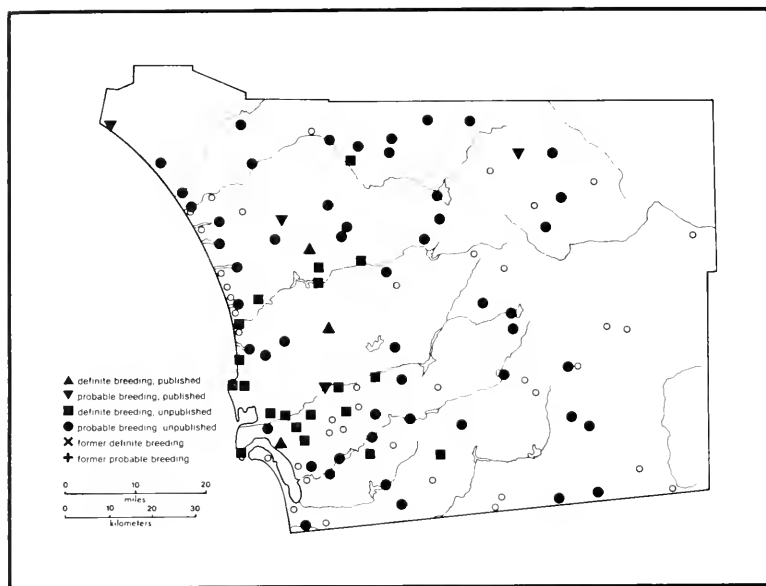
Hylocichla mustelina (Gmelin)

Casual fall vagrant. Three records: one collected in the Tijuana River Valley on 18 November 1967 (McCaskie 1971: SD 36355); one seen at the same locality on 25 October 1978, found killed by a cat the following day (AB 33:216, 1979; some feathers saved); and one photographed at Point Loma, from 24 October to 5 November 1981 (B. Daniels).

AMERICAN ROBIN

Turdus migratorius propinquus Ridgway

Fairly common resident, irregularly uncommon to abundant winter visitor. Wintering robins visit parks, residential and agricultural areas, chaparral, and woodland habitats—wherever they can find a supply of berries to sustain them. Robins disperse throughout the coastal lowland and foothill zones in winter, and occur uncommonly in the Anza-Borrego Desert. The great annual fluctuations in the numbers reaching San Diego County are perhaps best illustrated by the figures from Oceanside Christmas Bird Counts, since the resident population in this count circle, if any, must be small: 457 on 3 January 1976, six on 1 January 1977, 1035 on 31 December 1977, and two on 1 January 1979. Wintering birds usually occur from late October (20 October 1962, G. McCaskie) to late March or



MAP 89. Breeding Distribution of Wrentit (*Chamaea fasciata*)

early April, or even to late April after flight years (28 April 1884, Poway, Emerson 1887). Dates for the Anza-Borrego Desert extend from 4 November (1974) to 8 April (1973, ABDSP file). An exceptionally late straggler was at Campo on 14 May 1884 (Belding 1890).

Breeding Robins inhabit two discrete regions of San Diego County. The species has apparently colonized both regions in the last forty or so years. Robins nest uncommonly in mixed coniferous-oak woodland in the mountain zone, where breeding was first reported in the "Cuyamaca Mountains, 5000 ft. [1520 m]" by Grinnell and Miller (1944). Additional known mountain localities are Palomar Mountain (nest in summer 1969, AFN 23:696, 1969), Hot Springs Mountain (two on 22 July 1980, Unitt 1981), and Agua Dulce Creek, Laguna Mountains (six on 25 June 1978, including a juvenal and a female on a nest, P. Unitt). This population is probably resident in San Diego County in summer only, moving south in winter, but no information has been gathered yet on its migration.

Robins also breed fairly commonly in park habitat and nearby residential areas in the coastal lowland, mostly in the city of San Diego. Reproductive activity was first reported by Mead (1952), who observed one adult and one juvenal in San Diego on 16 July 1951, and two adults and two juvenals at Rancho Santa Fe on 22 July 1951. Other lowland localities are Point Loma (eight juvenals on 23 June 1980, C. Edwards), Presidio Park (10 on 24 April 1974,

one nest found, J. Dunn), Balboa Park (D. Herron), Clairemont Mesa (G. McCaskie), and campus and neighborhood of San Diego State University (P. Unitt). This population is probably sedentary, but this would be difficult to establish positively without a study of marked individuals.

Babblers

Family *Timaliidae*

WRENTIT

Chamaea fasciata henshawi Ridgway

Common resident. The Wrentit is perhaps the most characteristic bird of the chaparral. The birds enter parks, residential areas, and woodland habitats occasionally, but never go far from the dense cover of their preferred habitat. Wrentits occur throughout the coastal slope of San Diego County, excluding the Coronado Peninsula, and penetrate east to Peña Spring (one on 10 September 1976), Mount Laguna (24 April 1977), and 8 km (5 miles) east of Campo (26 June 1978, P. Unitt). The species is most numerous in the coastal lowland and foothill zones, but occurs uncommonly to fairly commonly in mountain chaparral, as high as the summit of Hot Springs Mountain (Unitt 1981). Egg dates (50): 20 March– 6 June; Sharp (1907) reported young as early as 11 March.

Old World Warblers, Gnatcatchers

Family *Sylviidae*

GOLDEN-CROWNED KINGLET

Regulus satrapa amoenus van Rossem

Irregularly rare to uncommon winter visitor. Golden-crowned Kinglets are found most frequently in mixed coniferous-oak woodland, riparian woodland, and parklands. They have been noted at many localities in the mountain and coastal lowland zones; more study of the foothill zone would presumably reveal them in that area, too. Numbers of Golden-crowned Kinglets reaching San Diego County vary greatly from year to year; in some winters none may come this far south. The largest numbers were noted during the winters 1976–77, 1977–78, and 1979–80, with up to 10 at Palomar Mountain during the winter 1979–80 (AB 34:308, 1980) and 18 at Point Loma on 18 December 1976 (C. Edwards). Dates for Golden-crowned Kinglet extend from “early October” (1976, Ocean Beach, specimen in SD exhibit loan library) and 15 October (1973, one at Point Loma, AB 28:109, 1974) to 29 March (1978, one at Santee Lakes, W. T. Everett). An exceptionally early bird was at Point Loma on 25 September 1976 (G. McCaskie), and an exceptionally late one was at the same locality on 14 April 1977 (AB 31:1048, 1977). The occurrence of this species in San Diego County may be a rather recent development, since it was first reported here only in 1954 (25 December, one in Balboa Park, AFN 9:288, 1955).

Subspecies: The one specimen in the SD study collection (Point Loma, 1 November 1966, SD 36082) is *R. s. amoenus*, the race breeding from southern Alaska and Yukon south through the mountains of western North America to the San Jacinto Mountains, Utah, and Colorado. This specimen has the underparts a more whitish-gray, less buff-colored than *R. s. olivaceus* Baird, but a greener back than *R. s. apache* Jenks or nominate *R. s. satrapa* Lichtenstein. The bird mounted for the museum’s exhibit loan library has a lighter, grayer back like *R. s. apache*, but may have faded from exposure to light. Phillips et al. (1964) and Monson and Phillips (1981) considered *amoenus* a synonym of *apache*.

RUBY-CROWNED KINGLET

Regulus calendula (Linnaeus) subsp.

Common migrant and winter visitor, accidental in late spring. Wintering Ruby-crowned Kinglets disperse throughout San Diego County in many habitats: all woodlands, parks, chaparral, desert-edge and desert wash scrub. The species seems most numerous in riparian woodland of the coastal lowland, with as many as 40 found in a day as at Old Mission Dam on 25 February 1978 (P.

Unitt) and in the lower Otay River valley on 20 December 1980 (G. McCaskie). It remains uncommonly as high as the mountain zone through mid-winter (two at Paso Picacho Campground on 21 January 1978), and is fairly common at times in the Anza-Borrego Desert (10 at Vallecito on 18 March 1978, P. Unitt). Late September through late April is the usual season for Ruby-crowned Kinglets; recorded extremes are 6 September (1973, one at Otay Mesa, AB 28:106, 1974) and 5 May (1974, one at Point Loma, J. Dunn).

Emerson (in Belding 1890) thought the Ruby-crowned Kinglet “perhaps breeds in the first” on Volcan Mountain, and Stephens (1919a) reported it as a “rare summer resident of the highest mountains.” Neither reported specimens or definite observations to support these statements, however. The single definite report of the species in the breeding season is of one singing male along Agua Dulce Creek, Laguna Mountains, on 30 May 1974 (AB 28:950, 1974).

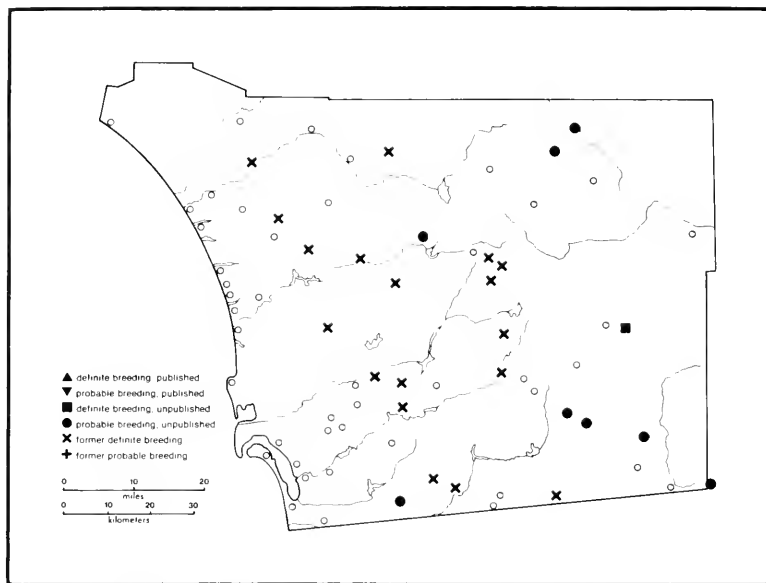
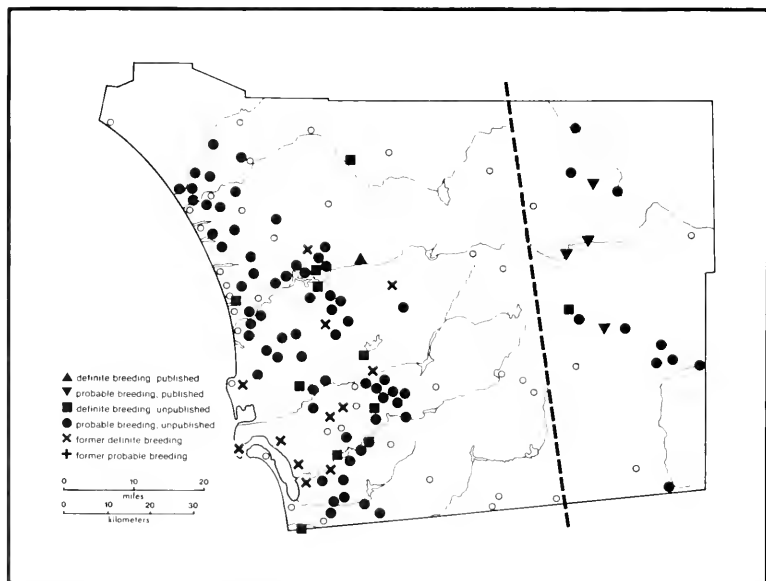
Subspecies: *R. c. calendula* is the race commonly occurring in San Diego County; Browning (1979) showed that *R. c. cineraceus* Grinnell and *R. c. arizonensis* Phillips are synonyms of nominate *calendula*. One female collected at sea 16 km (10 miles) west of Point Loma on 25 September 1953 (SD 29986) is evidently *R. c. grinnelli* Palmer, which breeds in coastal southeastern Alaska and British Columbia, as indicated especially by its darker grayish breast and deeper yellowish flanks, as compared to *calendula*. Browning thought *grinnelli* was sedentary, but A. M. Rea (pers. comm.) has identified as this race specimens collected as far south as Humboldt County; Grinnell and Miller (1944) recorded it wintering south to Santa Barbara County.

BLUE-GRAY GNATCATCHER

Polioptila caerulea umoenissima Grinnell

Fairly common migrant and winter visitor, rare and localized summer resident. In winter Blue-gray Gnatcatchers visit riparian undergrowth, weedy brush in agricultural areas, thickets in desert washes, and less frequently, chaparral. Although they may be found in completely dry situations, the birds seem most numerous in dense plant growth bordering streams and ponds (up to 25 seen at Otay on 15 December 1979, G. McCaskie). Wintering birds occur in two distinct areas: the coastal lowland and Anza-Borrego Desert. In the coastal lowland, dates of occurrence extend from early September (earliest record, 4 September 1977, one in the Tijuana River Valley, P. Unitt) to early or mid-March, rarely to early April (latest, 5–6 April 1975, two in San Diego area, G. McCaskie). The timing of migration in the Anza-Borrego Desert is not yet known because of lack of study in this area in fall and possible presence of breeding birds in spring.

Local breeding Blue-gray Gnatcatchers occur in foothill zone chaparral, desert-edge scrub, and mesquite thickets

MAP 90. Breeding Distribution of Blue-gray Gnatcatcher (*Poliophtila caerulea*)MAP 91. Breeding distribution of Black-tailed Gnatcatcher, *Poliophtila (melanura) californica* west of the dashed line, *P. m. lucida* to the east.

in desert washes. Breeding season localities from 1970 to 1980 were Otay Mountain (two on 18 June 1980), Cibbets Flat (five on 5 April 1978), La Posta Truck Trail (19 June 1977), McCain Valley (one on 9 May 1971), Agua Caliente Springs (pair building nest on 5 April 1978, P. Unitt), Black Canyon, elevation 610 m (2000 feet) (pair on 20 June 1980, K. Weaver), extreme southwestern Imperial County (three on 10 April 1976, G. McCaskie), Palm Mesa (one on 14 May 1973, A. Morley), and Lower Willows in Coyote Creek Canyon (one on 6 May 1978, S. Goldwasser). Formerly, breeding Blue-gray Gnatcatchers were far more common and widespread, occupying riparian woodland throughout the coastal lowland and extending up into the mountain zone (several egg sets from Cuyamaca Mountain and Julian, WF). Like so many other birds which bred in riparian woodland, this species has fallen victim to brood-parasitism by the burgeoning population of Brown-headed Cowbirds. Breeding Blue-gray Gnatcatchers arrive in late March or early April (one in extreme southwestern Imperial County on 24 March 1978, P. Unitt; Julian, 2 April 1884, Goss in Belding 1890), but it is unknown when they depart in fall. Egg dates (34): 17 April – 8 July.

BLACK-TAILED GNATCATCHER

Poliophtila melanura Lawrence subsp.

Two distinct subspecies of Black-tailed Gnatcatcher inhabit two disjunct regions of San Diego County. The habitats and status of these subspecies are so different that it is more convenient to discuss them separately. Indeed, the two forms are different enough in plumage and especially in voice as to suggest they would be reproductively isolated if their ranges were ever to come into contact. This possibility that the two forms are distinct species is indicated below by referring to the coastal bird as *Poliophtila (melanura) californica*.

The race *Poliophtila melanura lucida* van Rossem is a fairly common resident in desert wash scrub throughout the Anza-Borrego Desert. It ascends the east side of the mountains as far as about 730 m (2400 feet) elevation, in Mason Valley (eggs collected on 23 April 1926, WF). This form of Black-tailed Gnatcatcher is easily seen at Yaqui Well, Agua Caliente Springs (six on 5 November 1978), and Palm Spring (four on 2 April 1978, P. Unitt). Egg date (1), 23 April; G. McCaskie noted an active nest at Yaqui Well on 16 May 1964.

The other subspecies, *P. (m.) californica* Brewster, is an uncommon and localized resident of the coastal lowland. These gnatcatchers inhabit coastal sage scrub almost exclusively, and prefer areas where California sage (*Artemisia californica*) is the dominant plant. Sometimes the birds may wander into nearby disturbed brush dominated by *Baccharis sarothroides* or other plants. Elizabeth Copper (pers. comm.) suggests that the gnatcatchers leave the sage for more humid shrub habitats nearby in late summer when most sage scrub plants are dry

and brown. However, it is clear that coastal sage scrub habitat is essential to the California (Black-tailed) Gnatcatcher. This bird attracted some attention beginning in the late 1970s because of its serious conservation problems. T. A. Oberbauer estimates that 70% or more of the coastal sage scrub in San Diego County has been destroyed for urban and agricultural developments, so it is likely that this population of gnatcatchers has been reduced by the same factor. Also, brood-parasitism by Brown-headed Cowbirds may be reducing the population, as certainly has happened to the Blue-gray Gnatcatcher. Friedmann (1934) reported parasitized nests of Black-tailed in San Diego County. Atwood (1980) described the distribution of *Poliophtila (m.) californica*, and estimated a San Diego County population of about 400 pairs.

Information gathered by M. Evans (pers. comm.) and Atwood (1980) gives a more exact picture of the species' distribution than is available for most other land birds. California (Black-tailed) Gnatcatchers are widespread in the coastal lowland, but occur only in or near tracts of coastal sage scrub. The largest populations seem to be in the regions from Escondido south to Poway, of Los Peñasquitos and Carroll canyons west of Mira Mesa, from Lakeside and El Cajon south and east to Crest, and around Sweetwater Reservoir. All these areas lie on the fringes of expanding urban developments. Points on the eastern edge of this gnatcatcher's range are Pauma Valley (nest on 18 April 1947, E. Beemer), near the intersection of San Vicente Road and Wildcat Canyon Road southeast of Ramona (April 1975, *vide* M. Evans), 1.6 km (1 mile) east of Crest, and the head of Denney Canyon south of Lower Otay Lake (January 1979 and 1980, S. Montgomery). The single record of *P. (m.) californica* outside this range is of one collected at "San Felipe Canyon" on 13 February 1893 (SD 1678). Frank Stephens collected this specimen and a *P. m. lucida* on the same day at the same locality, presumably either the present San Felipe Valley or Sentenac Canyon. Egg dates (29), 24 March – 16 June.

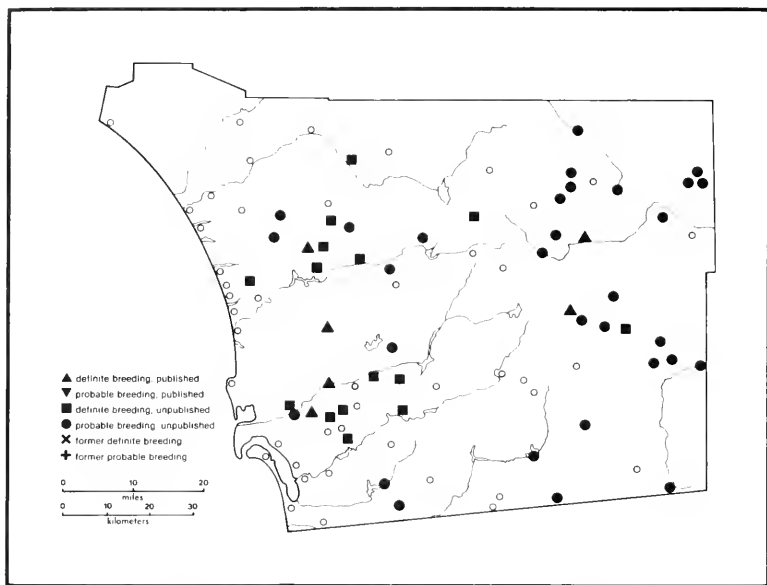
Pipits and Wagtails

Family Motacillidae

WATER PIPIT

Anthus spinoletta pacificus Todd

Very common to abundant migrant and winter visitor. The Water Pipit is a bird of open country, visiting grassland with short grass, agricultural land, lawns in parks, lake shores, and sandy beaches. The species may occur anywhere the birds can walk and forage on the ground, unimpeded by vegetation, though seldom if ever in desert scrub. Water Pipits are widespread in San Diego County, as illustrated by high numbers of 450 in the Tijuana River Valley on 20 December 1975 (C. Lyons), 200 at Lake Henshaw on 26 November 1977, and 200 in the Borrego Valley on 9 April

MAP 92. Breeding Distribution of *Phainopepla* (*Phainopepla nitens*)

1978 (P. Utt). Fall migrants arrive usually in early October, rarely as early as 14 September (1975, one in the Tijuana River Valley, G. McCaskie). In spring, most Water Pipits depart by late April, with 5 May (1974, one at Point Loma, J. Dunn) being the late extreme.

RED-THROATED PIPIT

Anthus cervinus (Pallas)

Very rare fall vagrant. Almost all Red-throated Pipits found in San Diego County have been in the agricultural fields of the Tijuana River Valley; records span only the brief interval of 8 October to 4 November. The species has been noted in seven different years: 1964 (up to 15, 12–27 October, two specimens collected on 13 October, McCaskie 1966a), 1966 (up to 10, 9–30 October, AFN 21:78, 1967), 1967 (up to 10, 22 October – 4 November, AFN 22:91, 1968), 1970 (one, 17 October, J. Dunn), 1974 (up to six, 19–27 October, AB 29:123, 1975), 1977 (one on lawn at Border Field State Park, 13–15 October, AB 32:259, 1978), and 1979 (two to three, 8–22 October, AB 34:202, 1980).

SPRAGUE'S PIPIT

Anthus spragueii (Audubon)

Casual vagrant in late fall and early winter (19 October – 19 December). Four records: up to three in an alfalfa field in the Tijuana River Valley, 19–27 October 1974 (McCaskie 1975), with one collected on 24 October (SD 38980); one

in a pasture in the Tijuana River Valley on 22 November 1975 (AB 30:128, 1976); two in weedy brush at Fiesta Island, Mission Bay, on 19 December 1975 (AB 30:768, 1976), and one in a bare dirt field in the Tijuana River Valley on 22 November 1977 (AB 32:259–262, 1978).

Waxwings, *Phainopepla*

Family *Bombycillidae*

BOHEMIAN WAXWING

Bombycilla garrulus (Linnaeus)

Casual winter visitor. Three records: two found dead and badly decomposed (not preserved) at Vallecito on 29 March 1920 (Stephens 1920b); four to six at Yaqui Well, 3–5 December 1972 (AB 27:664, 1973); and one at Presidio Park, 3–4 December 1974 (AB 29:743, 1975).

Subspecies: No extant specimen, but *B. g. pallidiceps* Reichenow is the only race in North America.

CEDAR WAXWING

Bombycilla cedrorum Vieillot

Irregularly fairly common to abundant winter visitor. Cedar Waxwings are nomadic in winter, flocks visiting any habitat where they can find a supply of berries. Parks and residential areas with such plants as pyracantha and pepper trees, chaparral with toyon or other native berries, and woodlands and desert wash scrub with mistletoe are their favorite situa-

tions. The species occurs in all regions of the county, most numerous in the coastal lowland (up to 840 at and near Guajome County Park on 31 December 1977, C. Wilson). The great fluctuations in numbers of Cedar Waxwings reaching San Diego County from year to year are illustrated by totals on San Diego Christmas Bird Counts: 87 on 14 December 1974, 349 on 20 December 1975, 17 on 18 December 1976, and 161 on 17 December 1977. Cedar Waxwings usually occur from late September to early May; extremes are 4 September (1977, one at Otay Mesa) and 21 May (1978, 50 at Point Loma, P. Unitt).

PHAINOPEPLA

Phainopepla nitens lepida Van Tyne

Phainopeplas occur in two areas of the county, and in each area their status is quite different. In the coastal lowland and foothill zones the species is a fairly common summer resident in riparian and oak woodland and sycamore groves, favoring places where mistletoe grows. The coastal slope population arrives generally in late April; 15 April (1935, San Diego, Crouch 1943) is the earliest reported spring arrival. The birds leave their breeding localities mostly during August. Egg dates for the coastal slope (41): 19 May - 12 July; Sharp (1907) reported eggs far advanced in incubation on 8 May. In fall, Phainopeplas disperse uncommonly to many areas such as parks and agricultural areas where they neither breed nor winter. Dates for these fall migrants extend from 4 August (1974, one at San Elijo Lagoon, SEL surv.) to 25 November (1977, one at Point Loma, P. Unitt). Fifteen in the Tijuana River Valley on 12 August 1967 (G. McCaskie) represents the largest number of fall migrants yet noted. The species is also a rare to uncommon and localized winter visitor in the inland valleys of the coastal lowland, at least to late February (22 February 1921, Lakeside, SD 33089; no March records for the coastal slope), with a maximum of eight at San Marcos on 1 January 1979 (D. Herron).

Another population of Phainopeplas is common (up to 40 on 16 March 1975 and 10 April 1976, G. McCaskie) in desert-edge and desert wash scrub in the Anza-Borrego Desert. Again the birds concentrate near clumps of mistletoe. The species is probably present in this area only from October through June, but the Anza-Borrego Desert has been studied so little in summer and fall that the Phainopepla's true seasonal status there is still obscure. Definitely recorded dates extend from 18 October (State Park Headquarters, A. Morley) and 20 October (1922, Mason Valley, SD 2370) to 1 July (1974, one in Salvador Canyon, A. Morley). Unfortunately, almost no information has been gathered on the timing of Phainopepla breeding in the Anza-Borrego Desert; at Agua Caliente Springs, a nest with eggs was found on 17 February 1974 (M. Evans) and a fledgling was seen on 5 May 1978. The ranges of the coastal slope and desert populations may approach closely, or possibly even overlap in the southeastern sec-

tion of the county. Fourteen between Jacumba and Campo on 26 June 1978 (P. Unitt) could have been from either population.

Cardueline Finches

Family *Fringillidae*
SUB-FAMILY *CARDEULINAE*

PINE SISKIN

Carduelis pinus pinus (Wilson)

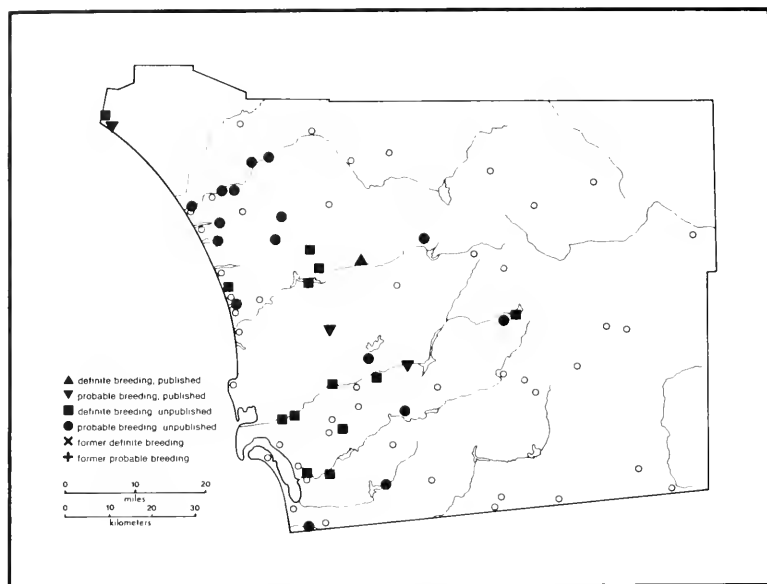
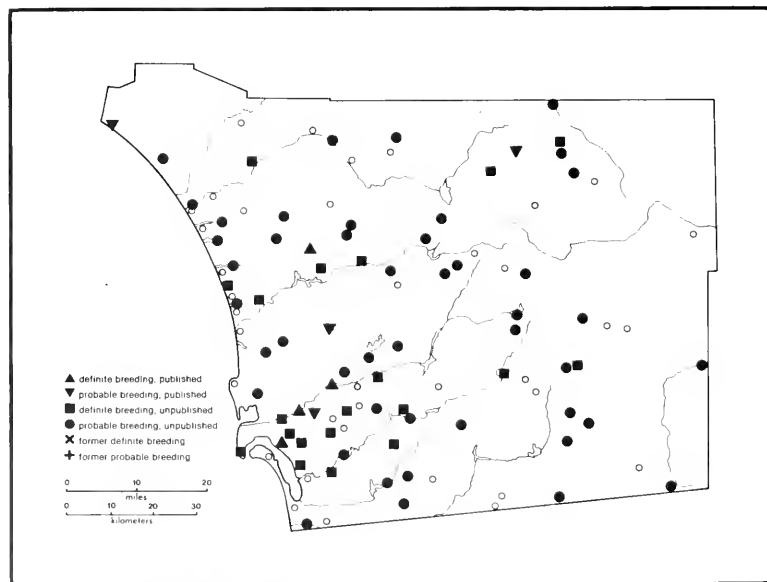
Irregularly rare to very common migrant and winter visitor, accidental in summer. During their occasional invasions, Pine Siskins reach all sections of San Diego County, including the Anza-Borrego Desert (up to 15 in the Borrego Valley on 4 April 1976, J. Dunn). They often keep to the crowns and upper branches of trees, but may forage in low shrubs. Siskins do not seem to show any more specific habitat preference here in winter. Numbers vary from almost none as in the winters of 1971-1972 and 1978-1979, to quite large as in 1963-1964 and 1975-1976 (up to 300 in Presidio Park on 17 November 1963, G. McCaskie; 148 at San Marcos on 3 January 1976, W. Lenarz; 100 in Balboa Park on 20 December 1975, J. Dunn). Arrival and departure dates vary greatly from year to year; early November to mid-April might be considered typical but the extremes are 9 September (1963, two in the Tijuana River Valley) and 29 May (1964, one at the same locality, G. McCaskie). Pine Siskins are nomadic in winter, so they may arrive at a given locality anytime in the season, remain for a brief period, then move out; an example is up to 60 at Old Mission Dam in late March and early April 1975 (J. Dunn).

The two summer observations are both of single individuals in montane coniferous woodland: Palomar Mountain, 19 July 1966 (AFN 20:600, 1966), and Cuyamaca Mountains, 9 July 1967 (G. McCaskie).

AMERICAN GOLDFINCH

Carduelis tristis salicamans (Grinnell)

Common resident. American Goldfinches show a special attachment to willow trees, both for nesting and foraging. Thus the largest numbers are found in riparian woodland, around ponds and lakeshores, and at freshwater marshes (up to 75 in the lower San Luis Rey River Valley in Oceanside on 28 May 1979, P. Unitt). Other native broad-leaved trees and orchards are used to a lesser extent, most often where these are near water. In the upper foothill and mountain zones, woodland dominated by the black oak, broken by small meadows, forms adequate breeding habitat. In winter, the species is less restricted, and visits parks, residential, and agricultural areas, wherever grasses or weeds offer the small seeds on which goldfinches subsist. The American seeks more humid conditions than the other two goldfinches. The range of the species covers most of

MAP 93. Breeding Distribution of American Goldfinch (*Carduelis tristis*)MAP 94. Breeding Distribution of Lesser Goldfinch (*Carduelis psaltria*)

the coastal slope of the county. American Goldfinches leave the mountain zone in the winter, and become less numerous in some other areas of the county at this season, but the extent and timing of their migration and dispersal are unknown. Egg dates (33): 21 April–6 July; Sharp (1907) reported 21 July.

The American Goldfinch is only a casual visitor to the east slope of the mountains (Yaqui Well, 22 April 1957; Santa Catarina Spring, October 1961, ABDSP file).

LESSER GOLDFINCH

Carduelis psaltria hesperophilus (Oberholser)

Common resident. Lesser Goldfinches favor disturbed areas or habitat edges, particularly places where small trees or shrubbery are adjacent to grass or weed patches. They seek as a food source plants such as thistles that bear many small seeds. Lesser Goldfinches feed on the seeds of chamise, probably the most abundant shrub in San Diego County. The species' habitat needs are generalized enough that it occurs in all sections of the county, though in the Anza-Borrego Desert it is restricted to the vicinity of oases. The largest breeding populations are probably those in agricultural areas and woodland edges in the coastal lowland. Lesser Goldfinches are not sedentary; they leave the mountain zone in winter, and flocks in the Borrego Valley in spring (up to 50 on 9 April 1978, P. Unitt) are probably not made of local breeding birds. It is not known, however, if the species engages in regular migration, in local nomadism, or both. Egg dates (35): 6 April–24 July. Sharp (1908) found a nest with eggs at Escondido on 24 September 1908, and Carpenter (1919) found another with nestlings at the same locality on 4 November 1918. Probably Lesser Goldfinches are opportunistic in their breeding habits, nesting late in the year if the food supply is especially favorable.

Subspecies: *C. p. hesperophilus*, the Green-backed Goldfinch, breeding from Washington and Utah south to southern Baja California and Sonora. Phillips et al. (1964) note that the type specimen of *C. p. psaltria* (Say) is green-backed and they therefore consider that *psaltria* is the correct name for this race. Birds of a black-backed race sometimes may be imported from Mexico as cage birds, and later escape from captivity.

LAWRENCE'S GOLDFINCH

Carduelis lawrencei Cassin

Common spring migrant, uncommon summer resident and fall migrant; in winter uncommon to rare, but locally abundant in occasional years. The habitat requirements of the Lawrence's Goldfinch do not seem to differ greatly from those of the Lesser Goldfinch, but it is much less numerous and more patchy in its breeding distribution than the Lesser. The Lawrence's Goldfinch probably prefers drier situations, but it also feeds extensively on chamise seeds and its breeding range still covers all zones of the coastal slope. The two species occur at many of the same localities, though

seldom in mixed flocks. Although it breeds regularly in the inland valleys, Lawrence's occurs only locally and sporadically along the coast in summer (10 at San Elijo Lagoon on 1 June 1975, SEL surv.; pair in the Tijuana River Valley 19 May–5 June 1978, P. Unitt). Egg dates (12): 7 April–9 July.

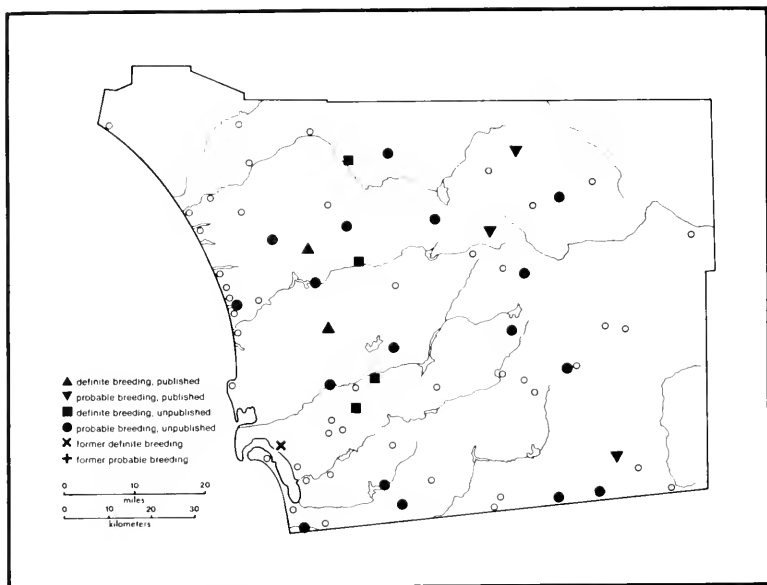
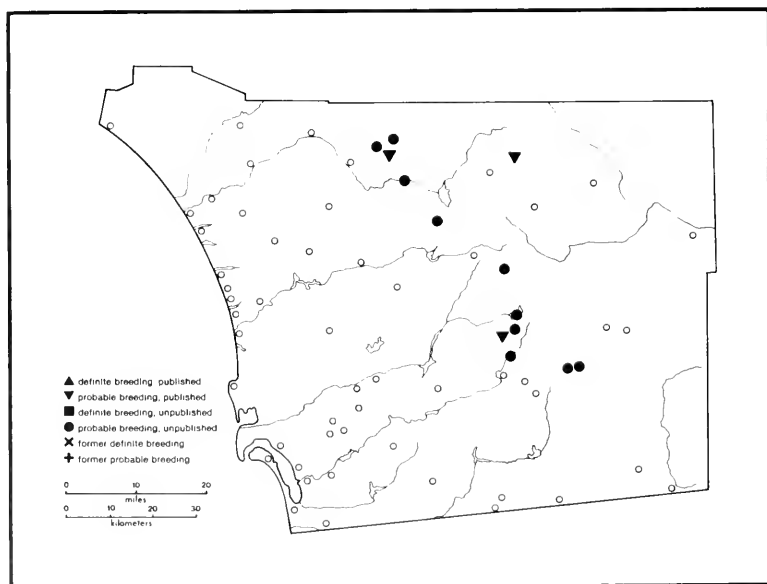
The seasonal movements of Lawrence's Goldfinches are complex, combining both migration and nomadism. The species is most widespread and common during spring migration, with substantial numbers at places along the coast where few or none breed (50 at San Elijo Lagoon on 2 March and 6 April 1975, SEL surv.; 50 at Bonita on 30 March 1962, G. McCaskie), and also in the Anza-Borrego Desert (up to 75 in the Borrego Valley on 21 March 1976, G. McCaskie; 500 on 8 April 1976, B. Cord). Migrants often arrive in early March, possibly as early as mid-February in some years (20 at Oceanside on 18 February 1978, P. Unitt). Occasional wintering flocks cloud the picture. In the Anza-Borrego Desert, Lawrence's Goldfinches may remain as late as mid-May (15 along Vallecito Creek at east end of Mason Valley on 6 May 1978, P. Unitt; Borrego Palm Canyon, 14 May 1973, A. Morley). They are not known to nest in this area, but this possibility should be investigated, since mid-May is well into the species' breeding season on the coastal side, and it has bred sporadically as far east as the Colorado River.

In fall, Lawrence's Goldfinches reappear at non-breeding localities along the coast by early September (one at Point Loma on 10 September 1977, P. Unitt); post-breeding dispersal probably begins much earlier. Numbers of migrants in fall are much smaller than in spring, and by mid-November the species is usually rare. Wintering birds occur mostly in the coastal lowland, but sometimes up into the mountain zone ("small flocks" at Volcan Mountain on 25 and 31 January 1884, Emerson in Belding 1890; one at Paso Picacho on 21 January 1978, P. Unitt). In occasional years, larger numbers winter in San Diego County: up to 20 at East San Diego in January and February 1928 (Gander 1930a), 50 at Pauma Valley on 2 January 1946 (E. Beemer). 500–700 in the Tijuana River Valley 4 January–15 February 1964 (AFN 18:389, 1964), and up to 500 at the same locality 21 December 1968–12 January 1969 (AFN 23:523, 1969).

PURPLE FINCH

Carpodacus purpureus californicus Baird

Fairly common resident, irregularly rare to common winter visitor. Purple Finches are permanent residents of the mixed coniferous-oak woodlands of the mountains of San Diego County, occurring on Hot Springs Mountain (Unitt 1981), Palomar Mountain (McGregor 1899; four specimens in SD), at Julian (22 April 1893, SD 915), in the Cuyamaca Mountains at least from Cuyamaca Lake (one on 6 May 1978) south to Green Valley Falls (5 May 1973), and in the Laguna Mountains (15 on 21 January and 25 June 1978,

MAP 95. Breeding Distribution of Lawrence's Goldfinch (*Carduelis lawrencei*)MAP 96. Breeding Distribution of Purple Finch (*Carpodacus purpureus*)

P. Unitt). They probably also breed uncommonly and locally in oak woodland in the more humid parts of the foothill zone in northern San Diego County, as indicated by observations at Mesa Grande on 26 May 1976 and at La Jolla Indian Reservation on 30 June 1977 (A. Fries). Although the birds may be found easily in suitable habitat all through the spring and summer, and undoubtedly breed, definite nesting activity has not been reported, aside from Stephens' (in Willett 1912) statement that the species "breeds in small numbers in the Cuyamaca Mountains."

Purple Finches occur as winter visitors to the coastal lowland and foothills in parks, riparian and oak woodlands, and chaparral, in the last habitat particularly seeking out berry-producing plants such as toyon. Numbers of winter visitors vary greatly from year to year, from very few as in 1978-1979, to many, as in 1974-1975. Some large numbers of wintering birds are 20 in Presidio Park on 20 November 1974, and 35 at Old Mission Dam on 23 March and 4 April 1975 (J. Dunn). Most wintering Purple Finches occur from mid-November to early April; extreme dates are 5 November (1972, five at Point Loma, G. McCaskie) and 18 April (1975, two at Live Oak Park near Fallbrook, J. Dunn).

CASSIN'S FINCH

Carpodacus cassinii Baird

Uncommon and localized winter visitor. The Cassin's Finch is evidently a regular winter visitor to coniferous woodland in the Laguna Mountains, where it has been noted annually since 1976. Numbers are usually small (eight on 27 February 1979, five on 22 January 1980), though 32 were counted on 16 February 1978. A remarkable invasion occurred during the winter of 1975-1976, with a maximum of 103 individuals seen on 26 January, and 25 still present on 7 April (B. Cord). The species also occurs very rarely in the Cuyamaca Mountains (two at North Peak on 19 November 1922, SD 33819-20; three at Paso Picacho on 10 April 1974 and 3 January 1980, B. Cord). The Cassin's Finch is casual in the coastal lowland, with records from Balboa Park ("several" on 23 March 1927, Gander 1929; one on 25 February 1929, SD 12360), Presidio Park (one from 11 November to 19 December 1954, AFN 9:289, 1955), Bonita (15 March 1923, SD 8553), and Point Loma (one on 9 November and another on 17 November 1970, AB 25:112, 1971). There is a single record from the east side of the mountains, of a bird collected in San Felipe Valley on 22 March 1895 (SD 856).

HOUSE FINCH

Carpodacus mexicanus frontalis (Say)

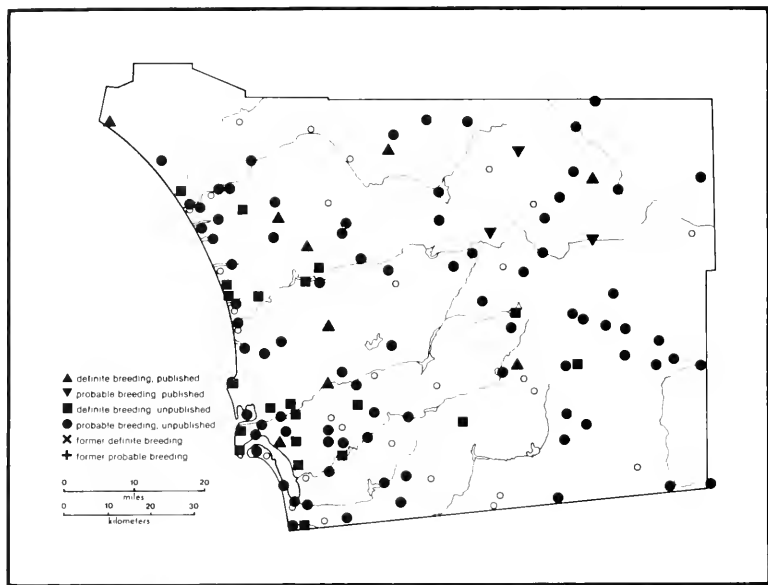
Very common to abundant resident. The House Finch is the most abundant and widely distributed breeding bird of San Diego County. It occupies all terrestrial habitats, from the low herbaceous growth on the coastal strand to mon-

tane coniferous woodland and sparse creosote bush scrub. It has adapted completely to urbanization, being common in residential areas with a minimum of ornamental plants, and frequently placing nests on buildings and bridges. It requires trees, bushes, or man-made structures for nesting, and prefers weedy, grassy, or agricultural areas for foraging. House Finches are perhaps least common in unbroken coniferous-oak woodland, where they are outnumbered by Purple Finches, but still occur uncommonly in this habitat. The greatest numbers are found in fall and winter in grassland and agricultural areas where large flocks gather to forage: 1000 in the Tijuana River Valley on 2 October 1977; 500 at Lower Otay Lake on 26 November 1978 (P. Unitt). Egg dates (33): 30 March-29 June; Sharp (1907) reported eggs as late as 20 July. The egg collectors paid relatively little attention to this abundant bird, so further investigation would probably reveal a breeding season even more protracted than these dates indicate.

RED CROSSBILL

Loxia curvirostra Linnaeus subsp.

Very rare winter visitor, casual in spring, with one record of possible breeding. Red Crossbills are intimately associated with coniferous trees, having specialized bills for extracting seeds from cones. Good cone crops are required for crossbills to breed successfully, but wandering birds may be forced to rely on other seeds or fruits as food sources. In San Diego County, the species is most likely to be found in montane coniferous woodland. There are four reports from such areas: two from the Laguna Mountains (four on 16 May 1964, AFN 18:488, 1964; eight on 26 January 1976, B. Cord) and two from Paso Picacho Campground, Cuyamaca Mountains (10 on 21 March 1976; one on 28 April 1976, AB 30:770 and 894, 1976). Wanderers have been noted at several other localities on the coastal slope: Escondido (two collected from a flock of six on 1 March 1920, Sharp 1920, SD 18195-6), Campo (6 March 1877, SD 873), Lemon Grove (two on 22 October 1966, AFN 21:80, 1976; earliest fall record), Balboa Park (six on 20 December 1969, AFN 24:455, 1970), San Diego (one on 20 December 1970, AB 25:630, 1971), and Presidio Park (eight on 30 March 1974, AB 28:694, 1974). Crossbills have occurred several times at Point Loma, in the many conifers planted at and near Point Loma College: three banded between 29 October and 3 November 1969, 11 on 3 February 1970 (AFN 21:100c and 541, 1971), up to 10 from 15 January to 3 April 1971 (AB 25:630, 1971, G. McCaskie), six on 5 November 1972 (AB 27:125, 1973), and one on 20 April 1974 (AB 28:854, 1974). On 2 November 1966, a flock of 150 arrived at Point Loma, about 50 remained through the following winter, and 12 persisted as late as 4 June 1967. In late March, some birds were in pairs, carrying nest material, and engaging in apparent courtship feeding, but it is not known if they successfully completed

MAP 97. Breeding Distribution of House Finch (*Carpodacus mexicanus*)

their reproductive cycle (AFN 21:80, 460, and 542, 1967; G. McCaskie).

Subspecies: Geographic variation in the Red Crossbill is an exceedingly complex problem, fraught with difficulties caused by nomenclatural confusion and by the birds' nomadic habits. A. R. Phillips has studied the situation (Phillips et al. 1964, Monson and Phillips 1981) and has identified the five specimens from San Diego County preserved in SD. He divides the species into four subspecies-groups based on size. Crossbills of only the two largest groups have yet been collected in San Diego County. *L. c. stricklandi* Ridgway, the largest race, breeds in the Sierras Juarez and San Pedro Martir in northern Baja California, and from southeastern Arizona south through the mountains of Mexico. Phillips has identified the specimen from Campo as *stricklandi*. The other four specimens (the two from Escondido, and two from Point Loma, 26 March 1967 and 13 May 1971, SD 36102 and 38023) he has determined as *L. c. "benti"* Griscom, of which he now believes *L. c. bendirei* Ridgway is the nomenclaturally correct name. This form, smaller than *stricklandi*, breeds in the Rocky Mountains, Sierra Nevada, and high mountains of southern California south to the San Jacinto Mountains. Further specimens of Red Crossbill are needed, since the species is so nomadic that wanderers of any race in North America could reach San Diego County.

EVENING GROSBEAK

Coccothraustes vespertina (Cooper) subsp.?

Very rare late fall and early winter visitor, casual spring migrant. The largest numbers of Evening Grosbeaks have been seen in montane coniferous woodland, between 9 October and 22 January. Four reports are from Palomar Mountain (one on 9 October 1972, AB 27:125, 1973; flock of 39 on 22 January 1978, AB 32:401, 1978; five from 2 to 4 December 1978, AB 33:316, 1979; and one on 15 January 1980, AB 34:308, 1980), two from the Cuyamaca Mountains (2 November 1939, Grinnell and Miller 1944; seven on 22 October 1972, AB 27:125, 1973), and one from the Laguna Mountains (ten on 3 November 1974, AB 30:130, 1976). There are eight reports from the coastal lowland, involving single, or in one case, two individuals. Lowland occurrences extend from 18 October to 5 January. The species has been noted twice at Ramona (26 October and 23 November 1955, AFN 10:59, 1956), twice in San Diego (26 December 1955, AFN 10:285, 1956; 5 January 1973, AB 27:665, 1973), twice at Point Loma (3 November 1966, AFN 21:80, 1967; 18 October 1969, AFN 24:100c, 1970), once in the Tijuana River Valley (20–22 October 1966, AFN 21:80, 1967), once at La Mesa (two, 31 October–8 November 1972, AB 27:125, 1973), and once at Rancho Santa Fe (4–18 November 1977, AB 32:264, 1978). Seven of these 15 records are for the two winters

1955–1956 and 1972–1973, flight years for this irregularly irruptive species. Sams and Stott (1959) report without details undated observations from Julian, Barona Indian Reservation, and Sweetwater Reservoir.

Spring migrants have been seen on four occasions: two at Yaqi Well on 16 May 1964 (AFN 18:488, 1964), three at Palomar Mountain on 25 May 1971 (AB 25:804, 1971), one at Paso Picacho Campground on 6 May 1976 (B. Cord), and one at Jacumba on 30 April 1978 (AB 32: 1057, 1978).

Subspecies: Not definitely known since no specimens have yet been collected in the county. All specimens from elsewhere in California, migrants as well as breeding birds, have been ascribed to *C. v. brooksi* (Grinnell), which breeds from British Columbia south through the western United States to central Arizona (Phillips et al. 1964 use the name *C. v. montanus* (Ridgway) for this race). Nominate *respertinus*, from the boreal forest of Canada, has reached at least as far as Arizona, however, as indicated by two specimens collected during the invasion of 1955–1956 (Phillips et al. 1964).

New World Warblers

Family *Emberizidae*

SUB-FAMILY *PARULINAE*

BLACK-AND-WHITE WARBLER

Mniotilta varia (Linnaeus)

Rare fall migrant, very rare winter visitor and spring migrant, accidental in summer. Black-and-white Warblers are noted most frequently creeping along the trunks and branches of a variety of trees near the coast. The farthest inland reports are of one at Dehesa on 24 December 1925 (Abbott 1927b) and one at Mount Laguna on 6 October 1964 (AFN 19:80, 1965). Five to eight is an average number to be found in the county during a fall season, with a maximum of 12 in 1969 (AFN 24:100b, 1970). Most Black-and-white Warblers occur from late September through late October, with one at Point Loma on 6 September 1966 (AFN 21:79, 1967) being the earliest. One or two remain in riparian woodland or parks in the coastal lowland through most winters, staying regularly until late March, very rarely to early April (1 April 1976, one at Old Mission Dam, AB 30:768, 1976; 2 April 1961, one in San Clemente Canyon, AFN 15:440, 1961). After a gap occupying most of April, Black-and-white Warblers occur again as very rare spring migrants along the coast, with most reports in mid and late May. Spring dates span the period 20 April (1969, one at Point Loma, AFN 23:627, 1969) to 8 June (1977, one at Point Loma, J. Butler). The single summer observation is of a singing male in riparian woodland at the east end of Lower Otay Lake from 13 July to 21 August 1975 (AB 29:1034, 1975).

BLUE-WINGED WARBLER

Vermivora pinus (Linnaeus)

Casual fall vagrant. Four sight records (no specimens or photographs): Point Loma, 19 September 1964; Tijuana River Valley, 26 September 1964 (McCaskie and Banks 1966); same locality, 19 September 1965 (AFN 20:92, 1966—questionable?), and Point Loma, 22 October 1980 (AB 35:227, 1981).

TENNESSEE WARBLER

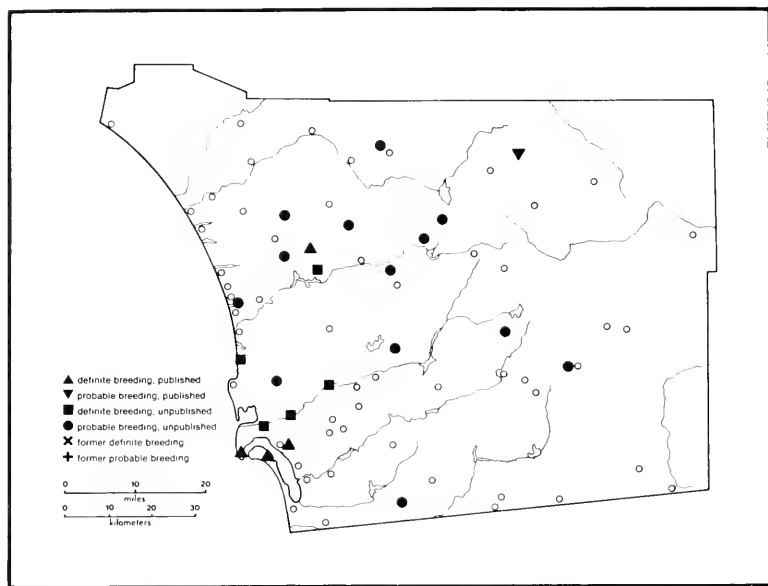
Vermivora peregrina (Wilson)

Rare fall migrant, very rare winter visitor and spring migrant. Almost all records of the Tennessee Warbler are from near the coast, with the most inland localities being Old Mission Dam (29 December 1974–5 January 1975, AB 29:743, 1975) and Lower Otay Lake (21 September 1975, R. Pitman), except for one at Butterfield Ranch in Mason Valley on 5 November 1978 (G. McCaskie). About eight to twelve were noted in San Diego County each fall during the 1970s, with most occurring from mid-September through late October. One in the Tijuana River Valley on 27 August 1972 (G. McCaskie) is the earliest reported. A few stragglers have been found as late as mid-January (16 January 1975, one in Balboa Park, AB 29:743, 1975). One at Point Loma 21–31 March 1967 (AFN 21:459, 1967) and another in Otay 16 March 1968 (AFN 22:479, 1968) presumably had remained the entire winter. In spring, the species has been reported far fewer times than in fall, but enough observations were made during the late 1970s to suggest it is of annual occurrence in late May and early June. The maximum for a day in spring is four seen at Point Loma on 4 June 1977 (P. Unitt). Extreme dates for this season are 11 May (1973, one in Camp Pendleton, AB 27:822, 1973) and 13 June (1977, one at Point Loma, P. Unitt), with exceptionally late records of one at Coronado on 21 June 1980 (AB 34:931, 1980) and two at Point Loma on 2 July 1970 (AFN 24:718, 1970). The report of one near Santee 1–4 May 1955 (AFN 9:359, 1955) is best disregarded.

ORANGE-CROWNED WARBLER

Vermivora celata (Say) subsp.

Common spring and fall migrant, fairly common winter visitor, uncommon to fairly common summer resident. The Orange-crowned is, after the Yellow-rumped, the second most common and widespread warbler in San Diego County, occurring frequently in chaparral as well as in parks and woodland habitats. Migrants pass through all sections of the county. Periods of migration are not known precisely because wintering or breeding individuals at many localities obscure the arrival and departure of transients. In spring, the species is common from late March through late April. Observations in the Anza-Borrego Desert, where Orange-crowned Warblers winter sparingly, if at all, and certainly

MAP 98. Breeding Distribution of Orange-crowned Warbler (*Vermivora celata*)

do not breed, indicate the total season of migration extends at least from 21 February (1962, Agua Caliente Springs) through 11 May (1973, Borrego Palm Canyon, A. Morley). Typical high numbers for spring are 50 in the San Diego area on 5 April 1975 (G. McCaskie) and 35 at Agua Caliente Springs on 5 April 1978 (P. Unitt), but "thousands" grounded during a severe windstorm near Banner on 22 April 1967 (G. McCaskie) most dramatically indicates that vast numbers of Orange-crowned Warblers do migrate over San Diego County.

Breeding Orange-crowned Warblers are widely but locally distributed in damp coastal chaparral, parks, riparian woodland, oak woodland, and mixed coniferous-oak woodland in the coastal lowland, foothill, and mountain zones. Except in the immediate vicinity of the coast, the birds require a mixture of trees with shrubby undergrowth. The breeding population can be considered fairly common only at Point Loma (eight from 1 to 3 June 1977), where the birds nest in park shrubbery and dense chaparral. The species can be found regularly during summer in the mountains in small numbers (four at Palomar Mountain State Park on 26 June 1976; six at Cuyamaca Peak on 8 July 1978, P. Unitt). Over most of the county, however, nesting Orange-crowned Warblers would have to be rated as rare. Egg dates (2): 26 March–24 April; Dixon (in Willett 1933) found eggs near Escondido on 11 April 1933, and Abbott (1926) noted a bird incubating in the Golden Hill

neighborhood of San Diego on 14 June 1924. Fall migrants arrive by mid-August (20 at Old Mission Dam on 11 August 1974, P. Unitt) and remain common through late September. Numbers decrease through October and November, but large concentrations have been noted occasionally during winter: 40 at Coronado on 20 December 1980 (R. Webster); 100 in the Tijuana River Valley in a flooded swamp of mulefat and tamarisk on 17 December 1977 (P. Lehman). Wintering Orange-crowned Warblers have been recorded in the coastal lowland only, in parks, dense chaparral, and most numerous, in riparian woodland and undergrowth.

Subspecies: All four races of Orange-crowned Warbler have been reported in San Diego County, and two of these supposedly nest here. SD has 32 Orange-crowned Warbler specimens from the county, but they are inadequate to definitively answer many questions about the various races' status. Unfortunately, few of these mostly old specimens are annotated with gonad development data, crucial in determining the two locally breeding subspecies' ranges. Few are identified as to whether they are adult or immature. For a specimen to be identified subspecifically, its sex must be determined accurately because males of a dull race may resemble females of a more brightly colored race. Allan R. Phillips identified most of the Orange-crowned Warbler specimens in SD, and a few words from him helped me greatly in understanding this species' complex variation.

V. c. lutescens (Ridgway) is the brightest yellow form of Orange-crowned Warbler, and breeds from southeastern Alaska south through the Pacific coast states to southern California. This is probably the race nesting in the inland parts of San Diego County, here reaching the southern limits of its breeding range. *Lutescens* occurs also along the coast during migration and in winter. Its spring migration continues through mid-April, as indicated by a fat male with small testes found dead at Del Mar on 19 April 1981 (SD 42100). *V. c. sordida* (Townsend) is darker than *lutescens*, drabber, less yellowish, with dusky olive streaks on the breast and flanks. It breeds on the Channel Islands, the Palos Verdes Peninsula, and reportedly at Point Loma, Coronado, and San Diego (Willett 1912, Abbott 1926). SD has nine *sordida* from Point Loma and San Diego. Somewhere intergradation between *lutescens* and *sordida* must occur, since breeding localities are scattered between Point Loma and the mountains: Presidio Park (adult feeding two fledglings on 27 April 1978), Mission Valley near Interstate Highway 15 (pair feeding fledgling on 20 April 1978), Old Mission Dam (adult feeding fledgling on 14 May 1978, P. Unitt). The races' breeding ranges are not determinable from presently available specimens because none is labeled as having enlarged gonads and all were collected when migrants could have been mixed with local breeding birds (18 August to 3 May). A juvenal collected in the Cuyamaca Mountains on 6 June 1889 (SD 1349) is badly foxed. *V. c. sordida* is partially migratory, with some of the population dispersing to the inland during the non-breeding season, as indicated by one taken at Dehesa, 11 km (7 miles) east of El Cajon, on 11 February 1917 (SD 33196) and Monte Robles, 6 km (4 miles) southwest of Ramona, on 18 December 1930 (SD 14115).

The race *V. c. orestera* Oberholser breeds in the Rocky Mountains and Great Basin area from southwestern Yukon south to Inyo County, southeastern Arizona, and western Texas. It differs from *lutescens* by being a paler, duller yellow. Some females (immatures only?) are almost devoid of yellow on the throat, and some have the sides of the head more gray than olive. But the extent of gray tips on the head and back feathers of fresh-plumaged Orange-crowned Warblers shows much variability, and may be determined by the bird's age more than by its subspecies. *V. c. orestera* is a migrant and winter visitor in San Diego County; SD has seven local specimens collected between 12 October (1947, Point Loma, SD 19260) and 12 March (1951, Balboa Park, SD 29885). Grinnell and Miller (1944) reported an additional specimen from the Cuyamaca Mountains on 21 August (year not cited).

The fourth subspecies, *V. c. celata* (Say), breeds in the boreal forest of Canada, and is the palest, grayest, and least yellow. Again, there is only one published record, of one collected at Witch Creek on 24 April 1909 (Willett 1912). It may be noted that Willett did not distinguish *orestera*

nominate from *celata*, so the specimen should be re-examined before the identification is considered conclusive. No county specimens in SD represent *celata*. Still, very pale gray Orange-crowned Warblers have been seen at least during fall suggesting that nominate *celata* is a rare migrant in San Diego County: an example is one in the Tijuana River Valley on 5 September 1976 (P. Unitt). Obviously, much remains to be learned about the breeding distribution and migration of this species, requiring careful study of birds in the hand.

NASHVILLE WARBLER

Vermivora ruficapilla ridgwayi van Rossem

Common spring migrant, uncommon fall migrant, very rare winter visitor. Spring migrant Nashville Warblers occur in a wide variety of trees and shrubbery throughout San Diego County. This is one of the more common warblers in spring, with numbers as such 40 at Presidio Park on 5 May 1963 (G. McCaskie), 50 at the same locality on 24 April 1975 (J. Dunn), and exceptionally, "close to 1000" near Banner during high winds on 22 April 1937 (G. McCaskie). The first birds arrive in late March or early April (earliest record, 21 March 1970, Valley Center, AFN 24:643, 1970), and from mid-April through early May the species is common. The birds evidently pass through quickly, since the latest spring date is only 13 May (1974, one at Presidio Park, J. Dunn). A later record just outside San Diego County is of one collected on a ship near Los Coronados Islands on 28 May 1933 (Willett 1933).

In fall, Nashville Warbler is definitely uncommon in the coastal lowland. So few observations have been made of fall migrants elsewhere in the county it is not known if the species might be commoner farther inland. Dates for fall migrants extend from 11 August (1974, one at Old Mission Dam, P. Unitt) to at least mid-November. One or two individuals are reported during winter in parks in the San Diego area in most years, with a maximum of three as on 16 December 1978 (AB 33:667, 1979). Probably not all the birds seen in December remain or survive through the winter, but some do, as indicated by one at Point Loma on 14 February 1965 (G. McCaskie) and one in the Tijuana River Valley on 5 March 1978 (P. Unitt).

Subspecies: *V. r. ridgwayi*, the western race, is the only form documented for San Diego County. The eastern *V. r. ruficapilla* (Wilson) has been suspected occasionally during fall migration: Point Loma, 22-23 September 1973, and Otay Mesa, 20 October 1974 (G. McCaskie). Nominate *ruficapilla* differs from *ridgwayi* by the dirtier shade of yellow on the underparts, and by having the underparts completely yellow (no white lower belly as in *ridgwayi*). Individual variation is great enough that conclusive identification of vagrant *ruficapilla* demands a specimen.

VIRGINIA'S WARBLER*Vermivora virginiae* (Baird)

Uncommon to rare fall migrant, casual winter visitor, accidental in spring. Virginia's Warblers have been found almost exclusively in the coastal lowland, where they seem to prefer disturbed, weedy brush, but sometimes occur in trees with other migrant warblers. Most reports are from the Tijuana River Valley. Old Mission Dam (one on 1 October 1975, D. Ramsey) and Lower Otay Lake (one on 14 September 1975, R. Pitman) are the farthest inland localities where the species has been noted, except for a single record for Jacumba (one on 3 September 1963, AFN 18:75, 1964). From 1973 to 1980, five to ten Virginia's Warblers reported in a single fall season was average, but larger numbers were found during the 1960s and early 1970s, up to 20 in 1964 (AFN 19:81, 1965), 23 in 1972 (AB 27:123, 1973), and at least 35 in 1962 (McCaskie and Banks 1964). The species is most frequent in September, with extreme dates 13 August (1972, one in the Tijuana River Valley, G. McCaskie) and 21 October (1962, one at the same locality, McCaskie and Banks 1964), exceptionally 8 December (1967, one at San Diego, AFN 22:479, 1968). Three individuals have been noted in winter: San Diego, 13 January 1966 (AFN 20:460, 1966), Otay, 20 December 1969 (AFN 24:455, 1970), and Tijuana River Valley, 17 February 1980 (AB 34:308, 1980). The single spring record is of one seen at Encinitas on 29 April 1979 (AB 33:806, 1979).

LUCY'S WARBLER*Vermivora luciae* (Cooper)

Rare fall migrant, casual winter visitor. Most of the approximately 26 fall records of Lucy's Warbler are from the Tijuana River Valley, Point Loma, and Otay Mesa areas; individuals have also been noted at Lower Otay Lake (7-28 September 1975, AB 30:129, 1976), Jacumba (two on 26 August 1967, AFN 22:91, 1968), and Borrego Springs (one on 12 October 1969, AFN 24:100b, 1970). Almost all reports involve single individuals, though four were seen together in the Tijuana River Valley on 23 August 1980 (AB 35:228, 1981). Records of Lucy's Warbler are scattered through the fall, from 18 August (1966, one in the Tijuana River Valley, AFN 21:79, 1967) to 12 November (1979, one at the same locality, G. McCaskie), except for a very early individual in the Tijuana River Valley on 28 July 1981 (P. Unitt). One specimen has been collected, in the Tijuana River Valley on 19 September 1965 (McCaskie and Banks 1966; SD 35443).

The two winter observations are of one at Coronado 15-20 December 1979, and another in the Tijuana River Valley 15-25 December 1979 (AB 34:308, 1980).

PARULA WARBLER*Parula americana* (Linnaeus)

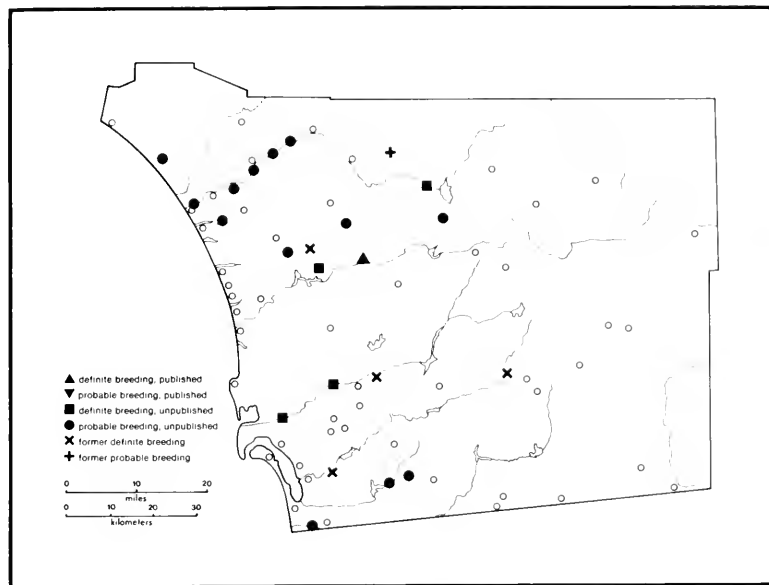
Very rare fall migrant, casual winter visitor and spring migrant. Almost all the 15 Parulas recorded in fall have

been in the Tijuana River Valley, Point Loma, and Otay Mesa areas; the exception is one at Old Mission Dam on 26 September 1974 (AB 29:123, 1975). All reports are of single individuals, and dates extend from 10 September (1974, Tijuana River Valley, AB 29:123, 1975) to 16 November (1975, one at the same locality, AB 30:129, 1976). In winter, the species has been seen on three occasions: Tijuana River Valley, 2 November 1969 to 2 January 1970 (AFN 24:100b and 540, 1970); Otay, 16-24 December 1978 (AB 33:316, 1979); and San Elijo Lagoon, 8 March 1981 (E. J. McNeil). There are four spring records: Point Loma, 7 April 1966: same locality, 20 May 1966 (AFN 20:547, 1966); Carlsbad, 16 May 1970 (AFN 24:645, 1970), and Borrego Springs, 24 March 1978 (AB 32:1056, 1978). As yet no specimens of Parula Warbler have been taken in San Diego County, but both spring records for Point Loma have been documented with photographs in SD.

YELLOW WARBLER*Dendroica petechia* (Linnaeus) subsp.

Fairly common spring migrant, uncommon and localized summer resident, fairly common to common fall migrant, rare winter visitor. Migrating Yellow Warblers stop in a wide variety of trees, though as Grinnell and Miller (1944) pointed out, "preference for broadleaved trees is still manifest." In fall they find, as do many other migrant warblers, the non-native tamarisk especially attractive. Migrants disperse throughout the county, but are not numerous in the mountain zone. The earliest arrivals in spring, in late March, are locally breeding birds: 24 March (1972, near San Diego, AB 26:808, 1972) is the earliest date. Birds which pass through San Diego County usually do not arrive before mid-April, after which time they appear at non-breeding localities. The species is most numerous in early and mid-May, with stragglers still moving through in early June and rarely, even mid-June (latest observed, one at Point Loma on 13 June 1977, P. Unitt).

Breeding Yellow Warblers are restricted to riparian woodland. Most recent known localities are in the coastal lowland, with one in the foothill zone (San Luis Rey Day Use Area near Lake Henshaw, three on 10 June 1980, including female feeding fledging cowbird, P. Unitt). The Yellow Warbler is another species whose population has been decimated by Brown-headed Cowbird brood-parasitism. Formerly it bred at many more riparian localities throughout the coastal slope, including the mountain zone ("fairly common" at Palomar Mountain in mid-June 1897, McGregor 1899; Volcan Mountain, juvenal on 27 July 1920, SD 2207; Cuyamaca Lake, two egg sets in WF). Grinnell and Miller (1944) report Vallecito, in the Anza-Borrego Desert, as a nesting locality, although this is not supported by specimens in MVZ. Egg dates (20), 3 May-10 June; Sharp (1907) reported 20 June.

MAP 99. Breeding Distribution of Yellow Warbler (*Dendroica petechia*)

Fall migrants are most numerous in September, and may be found generally from mid or late August through mid-October, rarely through mid-November. Extreme dates are 12 August (1967, one at Solana Beach, G. McCaskie) and 16 November (1974, one in the Tijuana River Valley, J. Dunn). Yellow Warblers also occur annually in winter in very small numbers in riparian woodland near the coast; examples are one on the lower San Luis Rey River in Oceanside on 1 January 1979 (AB 33:660, 1979), one at San Elijo Lagoon on 5 January 1975 (P. Unitt), and the maximum of five at Otay on 20 December 1980 (G. McCaskie).

Subspecies: The birds nesting in San Diego County, and most migrants as well, are *D. p. morcomi* Coale, which breeds from southern British Columbia and Montana south to northwestern Baja California, northern Arizona, and western Texas. The dark Alaskan race *D. p. rubiginosa* (Pallas) migrates through San Diego County in both spring and fall. A. R. Phillips has identified as *rubiginosa* three specimens collected at San Luis Rey on 1 June 1961, 8 and 15 October 1962 (AMR 90, 5412, and 257 respectively). J. R. Jehl has identified as *rubiginosa* specimens collected at Point Loma on 7 April 1968 (SD 36940), on the ocean 10 miles west of San Diego on 21 May 1967 (SD 37153), and in the Tijuana River Valley on 21 November 1967 (SD 36310). I have not seen adequate comparative material to distinguish the races myself.

CHESTNUT-SIDED WARBLER

Dendroica pensylvanica (Linnaeus)

Rare vagrant in fall, casual in late spring. The Chestnut-sided Warbler is noted in San Diego County almost every year, with a maximum of five in the autumns of 1975 and 1977. As with most vagrant warblers, it has been recorded principally on Point Loma, in the Tijuana River Valley, and at Otay Mesa, but also at Old Mission Dam (25–26 September 1974 and 23 October 1974, D. Ramsey) and in San Clemente Canyon (10 October 1975, C. Edwards). Dates of the approximately 32 fall reports extend from 10 September (1975, one in the Tijuana River Valley) to 10 November (1969, one at Point Loma, G. McCaskie). The two specimens for the county were collected in the Tijuana River Valley on 26 September 1962 (McCaskie and Banks 1964, SD 30297), and at San Luis Rey on 2 October 1962 (Rea 1964, MVZ 150003). Three individuals have been reported in spring: Tijuana River Valley, 5–6 June 1965 (AFN 19:511, 1965), Sweetwater River at Jamacha, 29 May 1974 (AB 28:854, 1974), and Point Loma, 5 June 1977 (AB 31:1049, 1977).

CERULEAN WARBLER

Dendroica cerulea (Wilson)

Casual vagrant, with two sight records at Point Loma in fall (26 October 1967, AFN 22:91, 1968; 22 October 1978, AB 33:217, 1979), and one photographed at the same locality in spring (26–27 May 1979, AB 33:806, 1979).

BLACK-THROATED BLUE WARBLER*Dendroica caerulescens* (Gmelin)

Rare vagrant in fall, accidental in winter. The vast majority of the approximately 48 Black-throated Blue Warblers found in San Diego County have been at Point Loma or in the Tijuana River Valley; the few other localities, all in the coastal lowland, include Valley Center (one on 11 November 1971, AB 26:123, 1972) and La Jolla (one on 24 October 1964, AFN 19:81, 1965). Six is the largest number reported in a single fall season (1974), with no more than two on any single day. The Black-throated Blue tends to occur later in the season than many migrant warblers, mostly from early October through early November. Extreme dates are 29 September (1973, one at Point Loma, AB 28:110, 1974; 1974, one in the Tijuana River Valley, A. Altman) and 15 November (1966, one at Point Loma, AFN 21:79, 1967). The single winter record is of a male at Old Mission Dam from 25 December 1974 to 5 January 1975 (AB 29:744, 1975).

Subspecies: The Black-throated Blue Warbler is sometimes divided into two races, but Mayr and Short (1970) considered the species monotypic.

PINE WARBLER*Dendroica pinus pinus* (Wilson)

Casual vagrant in fall, accidental in winter. Four fall records, two for the Tijuana River Valley (22 October 1966, AFN 21:79, 1967, SD 36049; 18 September 1971, AB 26:123, 1972), and two for Point Loma (28 October 1967, AFN 22:91, 1968; 13-16 October 1976, AB 31:224, 1977; photographs of both in SD). The single winter observation is of an adult male in the Twin Oaks Valley, 5 km (3 miles) north of San Marcos, on 28 December 1980 (AB 35:720, 1982, P. Unitt).

GRACE'S WARBLER*Dendroica graciae graciae* Baird

Casual fall vagrant. Five records: one collected in the Tijuana River Valley on 29 October 1966 (SD 36047), one captured and photographed at Point Loma on 8 September 1968 (A. M. Craig 1970), and others seen in the Tijuana River Valley 20-22 September 1977, 24-25 September 1977 (AB 32:262, 1978), and 16-17 September 1980 (AB 35:228, 1981).

YELLOW-THROATED WARBLER*Dendroica dominica* (Linnaeus) subsp.

Very rare vagrant in spring, casual in fall. Yellow-throated Warblers have been recorded seven times in spring: five times in mid to late April and twice in early June. No other vagrant warbler shows such a concentration of occurrences so early in the spring. One was found at Encinitas (29 April 1979, AB 33:806, 1979), one at Presidio Park (23-25 April 1974, AB 28:854, 1974), and five at Point Loma (18 April, 3 June, and 4-6 June 1979, AB 33:806, 1979; 26 April

1980, AB 34:816, 1980; and 25 April 1981, J. Oldenettel).

Of the three fall reports, two are from Point Loma (14 October - 5 November 1969, J.T. Craig 1972; 19 September 1973, AB 28:110, 1974), and one from the Tijuana River Valley (3 October 1976, AB 31:224, 1977).

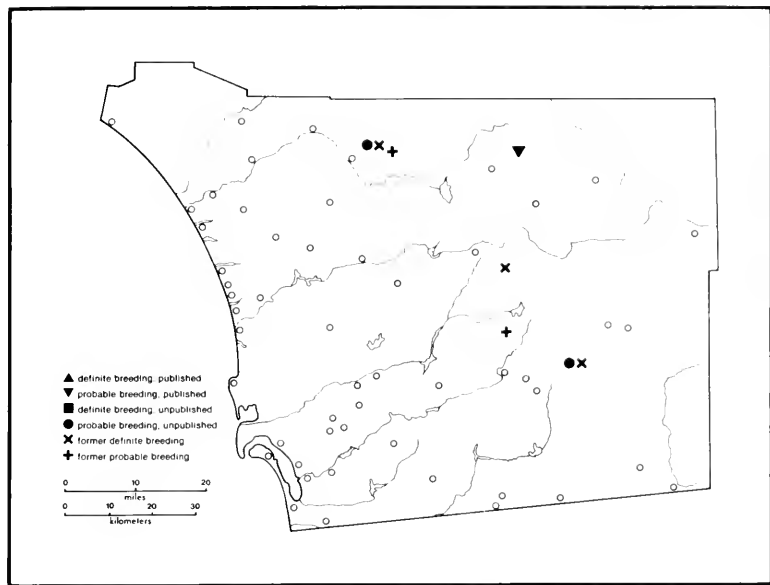
Subspecies: The bird captured, photographed, and released at Point Loma on 14 October 1969 was an example of the yellow-lored, long-billed nominate *dominica*, which breeds east of the Appalachian Mountains from Maryland and New Jersey to central Florida. All other San Diego County records are of the white-lored *D. d. albiflora* Ridgway, which breeds from Missouri and Ohio south to eastern Texas and Georgia. No specimens yet have been preserved from San Diego County, however.

BLACK-THROATED GRAY WARBLER*Dendroica nigrescens* (Townsend)

Fairly common spring migrant, uncommon fall migrant, rare winter visitor, rare summer resident. During both spring and fall migration, Black-throated Gray Warblers occur throughout San Diego County. They are considerably more numerous in spring, but still usually less abundant than most of the other western warblers. Twenty in a day (5 May 1963, Presidio Park, G. McCaskie; 4 May 1975, San Elijo Lagoon, SEL surv.) is the maximum yet observed. Spring migration extends from late March to mid-May, showing little variation from year to year. Extreme dates are 20 March (1976, San Diego, AB 30:886, 1976) and 17 May (1976, one at Point Loma, J. Dunn).

In fall, at most two or three individuals may be seen in a day. Migrants return in mid or late August, with 16 August (1964, one in the Tijuana River Valley, G. McCaskie) being the earliest reported date. They are most common in September, then gradually decrease through October and November to become rare by December. Two or three are usually reported in late December each year, from parks, riparian or live oak woodland in the coastal lowland. Only a few of these remain or survive the entire winter, however, such as one in the Tijuana River Valley on 26 February 1966 (AFN 20:460, 1966), one at Pauma Valley on 10 March 1974 (AB 28:694, 1974), and one at Santee on 22 February 1976 (AB 30:768, 1976).

Breeding Black-throated Gray Warblers are restricted to the mixed coniferous-oak woodland of the mountain zone. Definite summer records are so few they can all be listed here. The species is known during the nesting season at Palomar Mountain (19 June 1892, SD 1414; in Doane Valley on 13 June 1945, SD 19188; one near Lower Doane Valley on 26 June 1976, P. Unitt), Hot Springs Mountain (one on 24 June and three on 22 July 1980, Unitt 1981), Julian (eggs on 4 June 1896, WF), Cuyamaca Mountains (Grinnell and Miller 1944), and Mount Laguna (eggs on 15 May 1923, WF; single birds along Agua Dulce Creek on 13 July 1974 and 22 May 1975, J. Dunn and P. Unitt).



MAP 100. Breeding Distribution of Black-throated Gray Warbler (*Dendroica nigrescens*)

Subspecies: Some ornithologists, including Phillips et al. (1964), Lowery and Monroe (1968), and A. M. Rea (pers. comm.) divide Black-throated Gray Warbler into two races: nominate *nigrescens*, breeding in the Pacific States and central Rocky Mountains, and *D. n. halseti* Giraud, breeding in northern Baja California, Arizona, New Mexico, and Sonora, and distinguished by longer wings and tail, and more white in the tail. When I examined breeding specimens from the Pacific Northwest and Arizona in SD, I found a slight average difference in size between the two regions, but not nearly enough to make me feel confident about identifying racially San Diego County Black-throated Gray Warblers.

TOWNSEND'S WARBLER

Dendroica townsendi (Townsend)

Common spring migrant, fairly common fall migrant, uncommon to fairly common winter visitor. Townsend's Warblers frequent many kinds of trees during their migrations through San Diego County, but show a preference for conifers where available. Fall migrants begin arriving in mid-August (16 August 1977, three in the Tijuana River Valley, P. Unitt), exceptionally in early August (6 August 1978, one at Cuyamaca Peak, D. Povey). The fall migration continues through about mid-November, with some individuals remaining to winter in the coastal lowland, mostly in parks and riparian woodland. Maximum counts for winter are 12 at Old Mission Dam on 1 January 1975

(J. Dunn) and ten in Balboa Park on 20 December 1980 (P. Lehman).

Spring migrants are quite punctual in arriving around 15 April; 11 April (1978, one on ocean about 2 km [1 mile] off La Jolla, D. Povey) is the earliest reported date for a bird in migration. Townsend's Warblers reach peak abundance in early May, with a recorded maximum of 50 at Presidio Park on 8 May 1974 (J. Dunn). By late May, they are uncommon, and 6 June (1974, two at Point Loma, J. Dunn) is the latest known spring date.

HERMIT WARBLER

Dendroica occidentalis (Townsend)

Uncommon to rare fall migrant, very rare winter visitor, fairly common to common spring migrant. Hermit Warblers have many of the same habits as Townsend's Warblers, and are often found with them. In the coastal lowland during fall migration, the species has been noted only singly or in twos, between 16 August (1977, one in the Tijuana River Valley, G. McCaskie) to 5 November (1976, one at the same locality, J. Dunn). The only fall report outside the coastal lowland is of six at Cuyamaca Peak on 6 August 1978 (D. Povey); this represents both the earliest and largest number of Hermit Warblers reported in fall. The inland regions of the county have been so little studied during fall migration that this single record may provide a better guide to the species' status at that time of year than the trickle of occurrences along the coast.

At least nine occurrences are known for winter. Reports of a bird at Point Loma in four different winters from 1963 to 1968 (G. McCaskie) possibly represent a single individual. Elsewhere, one was in Balboa Park 6–16 December 1974, one was at Old Mission Dam 1–2 January 1975 (AB 29:744, 1975), two widely separated individuals were in Oceanside on 31 December 1977 (AB 32:875, 1978), and one was at Presidio Park on 25 February 1981 (AB 35:336, 1981).

In spring, Hermit Warblers occur throughout the county. They are common only for a brief period in late April and early May, with up to 40 at Presidio Park on 5 May 1963 (G. McCaskie), and 30 at the same locality on 8 May 1974 (J. Dunn). The total recorded span of spring migration is from 12 April (1977, one at Point Loma, AB 31:1046, 1977) to 3 June (1975, one at the same locality, J. Dunn).

Hybrids with Townsend's Warbler have been seen very rarely in fall, once in spring (Point Loma, 5 May 1974, AB 28:843, 1974), and one such specimen was collected (Point Loma, 24 September 1968, SD 36934). Putative Black-throated Green Warblers should be studied critically since hybrid Hermit x Townsend's may closely resemble that species.

BLACK-THROATED GREEN WARBLER

Dendroica virens virens (Gmelin)

Rare fall vagrant, accidental in winter. The Black-throated Green Warbler is noted in San Diego County almost every fall, with a total of about 43 records, and a maximum of six in 1975 (AB 30:129, 1976). The great majority has been reported from the Tijuana River Valley, Point Loma, and Otay Mesa, but individuals are also known from a few other locations in the San Diego area, and also from Yaqui Well in the Anza-Borrego Desert (24 October 1963, AFN 18:75, 1964). Most occurrences are from mid-September through early November. The earliest reported dates are 7 September (1974, San Clemente Canyon, C. Edwards, AB 29:123, 1975) and 9 September (1976, one in the Tijuana River Valley, G. McCaskie); latest 24 November (1966, one at the same locality, AFN 21:79, 1967) and 8 December (1963, one at the same locality, AFN 18:75, 1964). Specimens document three records: Hillcrest area of San Diego, 15 October 1960 (Huey 1961b, SD 30259), Tijuana River Valley, 25 September 1963 (SD 30775), and same locality, 28 September 1967 (SD 36261).

In winter, the only reports are of a single bird along the lower Otay River in Otay, 16 December 1978 – 6 January 1979 (AB 33:316, 1979), 26 January 1980 (AB 34:308, 1980), and 27 November 1980 – 15 February 1981 (AB 35:336, 1981), probably representing one individual returning three consecutive years.

PRAIRIE WARBLER

Dendroica discolor discolor (Vieillot)

Very rare fall vagrant, accidental in winter. One or two Prairie Warblers are found in the county in most years, with

up to four in 1962, 1964, and 1966. Most have been in the Tijuana River Valley, with a few reports for Otay Mesa, Point Loma, and Solana Beach (one from 19 to 28 October 1962, McCaskie and Banks 1964; two on 17 October 1964, AFN 19:81, 1965). The 26 fall records extend from 16 August (1977, Tijuana River Valley, AB 32:263, 1978) to 4 November (1969, Point Loma, AFN 24:100c, 1970), but are concentrated from early September to mid-October. The three fall specimens preserved from San Diego County were all collected in the Tijuana River Valley: 23 September 1962 (SD 30296), 13 October 1962 (SD 30471), and 1 October 1974 (SD 38931).

Prairie Warblers have been found twice in winter: one seen in the Otay River Valley from 19 December 1969 to 24 January 1970 (AFN 24:540, 1970); another first seen in Coronado on 15 December 1979 was found dead on 6 January 1980 (AB 34:308, 1980, SD 41418).

Subspecies: Kenneth C. Parkes identified 30471, 38931, and 41418 as nominate *discolor*, which breeds widely in the eastern United States, west to southeastern South Dakota and northeastern Texas. SD 30296 is too badly damaged for identification.

CAPE MAY WARBLER

Dendroica tigrina (Gmelin)

Very rare fall vagrant, accidental in winter and late spring. Almost all the Cape May Warblers noted in San Diego County have been found at Point Loma, in the Tijuana River Valley, and at Otay Mesa; the single exception is one at Carlsbad on 23 November 1962 (AFN 17:71, 1963). A total of 15 or 16 individuals has been recorded between 22 September (1970, one in the Tijuana River Valley, AB 25:111, 1971) and 25 October (1978, two at Point Loma, AB 33:217, 1979). Later reports are the one for Carlsbad mentioned above, and the single winter record of one at Point Loma from 10 November 1979 to 6 January 1980 (AB 34:203 and 308, 1980). Two individuals have been observed in spring, a female at Point Loma 1–3 June 1977, and a male at the same locality on 9 June of the same year (AB 31:1048, 1977). One record is documented with a specimen (the bird cited above for 22 September 1970 was collected the following day, SD 37620), and another with a photograph (Point Loma, 29 September 1970).

BLACKBURNIAN WARBLER

Dendroica fusca (Muller)

Rare vagrant in fall. Almost all of the 41 Blackburnian Warblers reported in the county were at Point Loma, the Tijuana River Valley, or Otay Mesa. Coronado (16 November 1979, R. Copper), Old Mission Dam (27 September 1977, B. Cord), and Agua Caliente Springs (10 October 1977, AB 32:262, 1978) are the only other localities represented. The species has been recorded annually since 1969, with a maximum of five in 1975 and 1980. Reported occurrences are concentrated from late

September through late October with one in the Tijuana River Valley on 5 September 1974 (G. McCaskie) being the earliest, and the one in Coronado mentioned above being the latest. Two specimens have been collected, both in the Tijuana River Valley: 21 October 1962 (SD 30470) and 24 September 1966 (SBCM 3868).

MAGNOLIA WARBLER

Dendroica magnolia (Wilson)

Rare vagrant in fall, accidental in late spring. Magnolia Warblers are usually found with other migrant warblers, and most records are for Point Loma, the Tijuana River Valley, and Otay Mesa. Other localities are Old Mission Dam (13–16 October 1975, D. Ramsey), Rancho Santa Fe (10–22 November 1964, AFN 19:81, 1965), Palomar Mountain (2 October 1979, AB 34:203, 1980), and Pacific Ocean 72 km (45 miles) west of San Diego (19 September 1969, SD 37270). All but two of the approximately 42 fall reports are of single birds, and only two were noted on the remaining occasions. Six is the largest number reported in a single fall season, in 1974 (G. McCaskie, J. Dunn). The records are strongly concentrated in the period late September through mid-October; extreme dates are 11 September (1977, Tijuana River Valley, AB 32:262, 1978) and 22 November (1964, cited above). Besides the specimen collected at sea mentioned above, two others are preserved: Point Loma, 1 November 1965 (McCaskie and Banks 1966, SD 35521), and Tijuana River Valley, 28 September 1967 (AB 36172).

The two spring records are of one photographed at Point Loma on 18 June 1970 (AFN 24:645, 1970), and another seen at sea 121 km (75 miles) off San Diego on 5 June 1979 (AB 33:806, 1979).

YELLOW-RUMPED WARBLER

Dendroica coronata (Linnaeus) subsp.

Very common to abundant migrant and winter visitor, casual in summer. Yellow-rumped Warblers are almost ubiquitous, occurring anywhere there are trees or shrubs throughout the county, though uncommonly in the mountain zone in winter (three at Paso Picacho Campground on 17 January 1975, J. Dunn). The birds are most abundant in parks, in riparian woodlands, and among trees in agricultural areas. They are numerous from late September through mid-April, with first fall arrivals usually in mid-September, very rarely in early September (Poway, 3 September, year not specified, F. E. Blaisdell in Belding 1890; Tijuana River Valley, one on 5 September 1976, P. Unitt). Spring migrants occur uncommonly through early May. The latest reported spring date is 13 May (1974, one at Presidio Park, J. Dunn), besides exceptionally late individuals at Point Loma on 23 May 1967 (AFN 21:547, 1967), 1 June 1979 (C. Edwards), and 6 June 1979 (J. Dunn).

The five summer observations are all of single individuals in coniferous woodland near the tops of the county's highest

mountains: Palomar Mountain, 25 May 1949, 9–12 August 1950, 7 June 1951, and 23 July 1978 (E. Beemer); near the summit of Cuyamaca Peak, 29 July 1978 (G. McCaskie).

Subspecies: Two easily distinguishable subspecies-groups of Yellow-rumped Warbler, formerly considered distinct species, occur in San Diego County. The *auduboni* group, the Audubon's Warbler, is the abundant bird whose status is described above.

Two races of this group, distinguished by size, visit the county. Phillips et al. (1964) provide the diagnostic measurements. The smaller *D. c. auduboni* (Townsend) breeds from central British Columbia south through the Cascade Range, Sierra Nevada, and highest mountains of southern California to the Sierra San Pedro Martir, Baja California, Mexico, while the larger *D. c. memorabilis* Oberholser breeds in the Great Basin and Rocky Mountains. Of the 27 locally collected males in SD, 11 are *auduboni*, nine are *memorabilis*, and seven fall in the zone of overlap. Of the 19 females, only two are *auduboni*, ten are *memorabilis*, and seven are intermediate. This suggests the possibility of a difference in migration patterns between the sexes of Audubon's Warbler. More extensive study of a larger number of specimens would be necessary to demonstrate such a difference conclusively.

The nominate *coronata* group, the Myrtle Warbler, is uncommon though widespread in San Diego County, with exceptionally as many as 30 individuals in a day as in the Tijuana River Valley on 17 December 1977 (P. Lehman). Recorded dates for Myrtle Warblers extend from 5 October (1969, one in the Tijuana River Valley) to 22 April 1967, four near Banner, G. McCaskie; the bird at Point Loma on 23 May 1967 cited above was also a Myrtle. The nominate *coronata* group is also divided into two subspecies: larger *D. c. hooveri* McGregor breeding from Alaska to central Mackenzie and northern British Columbia, and smaller *D. c. coronata* (Linnaeus) breeding farther east in the boreal forest of Canada. Of the two Myrtle Warbler specimens from San Diego County in SD, both males, one is clearly *hooveri* (Point Loma, 29, October 1959, SD 30159, wing 78.5 mm.) while the other may be intermediate (Point Loma, 1 December 1965, SD 35522, wings 75.0 mm).

PALM WARBLER

Dendroica palmarum (Gmelin) subsp.

Uncommon fall migrant, rare winter visitor, accidental in spring. Palm Warblers are often found with other migrant warblers, but show some preference for low weeds and underbrush, in keeping with their more terrestrial habits. Wintering birds frequent thickets of low willows or mullet, usually near streams or ponds. The species is most often noted in the Tijuana River Valley, but has occurred at numerous other localities, all within 24 km (15 miles) of the coast. As many as six have been seen in a single autumn day (17 October 1974, Tijuana River Valley, G. McCaskie), but in some years it is rare, with as few as two reported

in 1970 and 1971. Palm Warblers tend to occur late in the fall; occurrences are concentrated in the period mid-October through early November. They are rare in late September and early October and 22 September (1974, Tijuana River Valley, G. McCaskie) is the earliest reported date.

One or two remain to winter in the Tijuana River Valley most years, with up to nine on 15 December 1979 (AB 34:663, 1980). Other recorded winter localities are Otay (20 December 1968, AFN 23:523, 1969), Otay Mesa (21 December 1973 – 18 February 1974, AB 28:694, 1974), Bonita (two, 23–25 December 1967, AFN 22:479, 1968), and Oceanside (10 February 1980, AB 34:308, 1980). Wintering birds have remained as late as 22 April (1979, one in the Tijuana River Valley, AB 33:806, 1979). It is not known if the bird reported at Encinitas on 30 April 1979 (AB 33:806, 1979) had wintered locally or was a spring migrant.

Subspecies: The great majority of Palm Warblers reaching San Diego County are the gray-breasted *D. p. palmarum* (Gmelin), which breeds from British Columbia east to central Ontario. *D. p. hypochrysea* Ridgway, distinguished by its entirely yellow underparts, has occurred on seven occasions: Tijuana River Valley, 20 March 1965 (G. McCaskie); same locality, 23 December 1967 (AFN 22:479, 1968); same locality, 6 January 1980 (AB 34:308, 1980); Point Loma, 8 November 1969 (SD 37394); Otay Mesa, 21 December 1973 (AB 28:694, 1974); Tijuana River Valley, 6 January 1980 (G. McCaskie); and same locality, 15 November 1981 (R. Webster). *Hypochrysea* breeds from eastern Ontario, central Quebec, and Newfoundland south into New England, and even in winter it normally occurs no farther west than Louisiana.

BLACKPOLL WARBLER

Dendroica striata (Forster)

Uncommon as a fall migrant or vagrant; accidental in very late spring. Blackpolls are found most frequently in tamarisks or other trees which concentrate migrant warblers along the coast. Most reports are from Point Loma and the Tijuana River Valley, but the species has been noted as far inland as Old Mission Dam (18 September 1974, 16 and 28 September 1975, D. Ramsey and P. Unitt), Lake Henshaw (7 November 1980, AB 35:228, 1982), and Agua Caliente Springs in the Anza-Borrego Desert (4 October 1977, AB 32:263, 1978). A maximum of six has been seen in a single day (5 October 1969, Point Loma, G. McCaskie), but as few as two were reported in the entire county during the fall of 1978. Peak numbers occur from late September through mid-October; the total span of recorded dates is from 3 September (1973, one at Otay Mesa, G. McCaskie) to 5 November (1966, one in the Tijuana River Valley, AFN 21:79, 1967), and 7 November (at Lake Henshaw, cited above), excluding a very late bird at Point Loma on 22 November 1979 (AB 34:203, 1980). Nine fall specimens have been preserved in SD since the species was first

recorded in the county in 1962 (McCaskie and Banks 1964).

The two spring occurrences are both of single females in late June: Point Loma, 21 June 1966 (McCaskie 1970b), and Tijuana River Valley, 24 June 1978 (AB 32:1210, 1978).

BAY-BREASTED WARBLER

Dendroica castanea (Wilson)

Very rare vagrant in fall, casual in spring. Some 22 Bay-breasted Warblers have been reported in San Diego County, mostly at Point Loma and in the Tijuana River Valley, but also on the ocean 39 km (24 miles) south-southeast of San Clemente Island (Arvey 1957, MVZ 134974), at the Salk Institute, La Jolla (AFN 21:79, 1967; SD 36048), and at Otay Mesa (29 September 1973, AB 28:110, 1974). One or two individuals are reported in most fall seasons, with a maximum of four in 1974 (AB 29:123, 1974). Dates span the period 12 September (1975, Point Loma, AB 30:129, 1976) to 16 November (1977, same locality, AB 32:263, 1978). The two specimens cited above are the only ones collected in the county.

The two spring records are of single males at Point Loma 5–6 June 1979 (AB 33:806, 1979) and 25–28 May 1981 (E. Copper).

AMERICAN REDSTART

Setophaga ruticilla (Linnaeus)

Uncommon fall migrant, very rare winter visitor and spring migrant, accidental in summer. American Redstarts occur in trees with groups of other migrant warblers, foraging in the middle to upper levels. Most reports are from the coastal lowland, but a few migrants have been noted in other areas: one at Lake Henshaw on 18 November 1978 (P. Unitt), two in the Laguna Mountains on 6 October 1964 (AFN 19:81, 1965), one near Borrego Springs on 12 October 1969 (AFN 24:100c, 1970), one at Mountain Palm Springs on 7 May 1976 (M. Carmody). Although the species is usually seen singly, two individuals together are not unusual, and a maximum of nine was at Point Loma on 27 September 1969 (G. McCaskie). It is most frequently observed from mid-September through late October, but has occurred as early as 21 August (1973, one at Old Mission Dam, G. McCaskie). By mid-November it is rare, with occasional individuals remaining to winter in riparian woodland. Examples are one along the San Luis Rey River in Oceanside, 1 January and 22 December 1979, (AB 33:660, 1979 and 34:656, 1980), and one along the San Diego River near the San Diego Mission from 2 December 1962 to 21 April 1963 and from 25 January to 4 April 1964 (McCaskie 1970a).

Spring migrants are reported most often in mid and late May. Extreme dates are 24 April (1964, one in the Tijuana River Valley, AFN 18:488, 1964) and 23 June (1977, one at Point Loma, AB 31:1191, 1977). Two stragglers have been found in midsummer: Point Loma, 9 July 1967 (AFN 21:605, 1967), and Old Mission Dam, 17 July 1975 (AB 29:1086, 1975).

OVENBIRD*Seiurus aurocapillus* (Linnaeus) subsp.?

Rare fall vagrant, very rare spring vagrant. Ovenbirds seek dense, shady thickets, where they can stroll about on the ground beneath a closed canopy. They are noted most frequently at Point Loma, but have been found at a much wider variety of localities than most vagrant warblers. Still, all reports are from the coastal lowland, except two from the Anza-Borrego Desert: one at Tamarisk Grove, 23 May 1977 (C. Stuteville), and two at Agua Caliente Springs on 4 October 1977 (AB 32:263, 1978). Twenty-three occurrences are known for fall, between 5 September (1963, Point Loma, McCaskie and Banks 1966) and 17 November (1970, same locality, AB 25:111, 1971). At least one has been noted each year since 1974 with a maximum of four in 1977. The ten spring records all fall within the brief period 22 May (1966, Point Loma, SD 36029) to 12 June (1968, same locality, AFN 22:577, 1968). The specimen collected on 22 May is the only one yet preserved from this county.

Subspecies: Kenneth C. Parkes examined the specimen from Point Loma and noted that it matches in color nominate *aurocapillus* from the eastern United States, but he had no specimens of the western race, *S. a. cinereus* Miller, for comparison.

NORTHERN WATERTHRUSH*Seiurus noveboracensis* (Gmelin)

Rare fall migrant and winter visitor; very rare spring migrant. Northern Waterthrushes prefer dense vegetation near water, particularly the understory of riparian woodland, where they often walk on damp ground. They are found hardly ever among the trees in parks or agricultural areas which prove attractive to most other migrant warblers. The species has been reported primarily from the coastal lowland, most often in the Tijuana, Otay, and San Luis Rey River valleys, at Old Mission Dam on the San Diego River, and at Otay Mesa. Fall migrants occur most frequently during September, with up to three in the Tijuana River Valley on 19 September 1971 (G. McCaskie). An exceptionally early individual at San Diego on 13 August 1966 (AFN 21:79, 1967) is the only one known for that month. One or two are usually found each winter; three at Otay and one at Sweetwater Dam on 16 December 1978 (AB 33:667, 1979) is the maximum for that season. Wintering birds usually remain no later than late March, but one which stayed in the Tijuana River Valley to 4 May 1980 (AB 34:817, 1980) is the latest record for the coastal lowland. The six coastal reports of spring migrants which probably did not winter locally are all for April, between the 5th (1974, San Elijo Lagoon, AB 28:854, 1974) and the 29th (1973, Camp Pendleton, AB 27:822, 1973). In the Anza Borrego Desert, A. Morley noted single individuals at Lower Willows in Coyote Creek Canyon on 4 May 1980 and 18 May 1981. No county specimens are housed in SD, but Linton (1907a) reported collecting one from two near National City on 29 September 1906,

and Keeler (1891) reported a bird collected by A. M. Ingersoll at San Diego on 11 September 1887.

Subspecies: The Northern Waterthrush is often divided into two or more races, but Eaton (1957), followed by Lowery and Monroe (1968) and Mayr and Short (1970), considered the variations in color to be more of an individual and less of a geographic nature, and so recognized no subspecies.

WORM-EATING WARBLER*Helminthos vermivorus* (Gmelin)

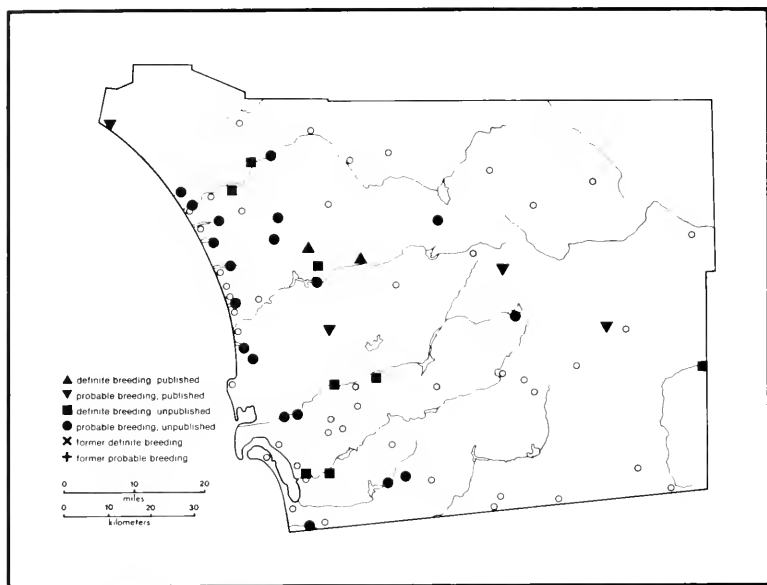
Very rare fall vagrant between 17 August and 26 October. Seven records: Chula Vista, 18 September 1960 (Huey 1961a, SD 30219); Otay Mesa, 12 September 1971 (AB 26:122, 1972); Old Mission Dam, 17–21 August 1973 (AB 28:109, 1974); Point Loma, 1 October 1973 (AB 28:109, 1974); Tijuana River Valley, 10 September 1974 (AB 29:123, 1975); Point Loma, 5 October 1975 (AB 30:129, 1976); and same locality, 15–26 October 1977 (AB 32:262, 1978).

PROTHONOTARY WARBLER*Protonotaria citrea* (Boddaert)

Very rare vagrant in fall, casual in spring. Of the seven fall records, five are for Point Loma: 4 November 1967 (AFN 22:91, 1968); 27 September 1969 (AFN 24:100b, 1970); 6 October 1978 (AB 33:216, 1979); 10 October 1979 (AB 34:202, 1980); and 10 October 1980 (AB 35:227, 1981). One was photographed at Coronado, 25–27 October 1972 (AB 27:123, 1973), and another was seen in the Tijuana River Valley, 16–21 September 1980 (AB 35:227, 1981). Spring records number five: on a boat offshore of San Diego, 21 May 1967 (possibly off northern Baja California, AFN 21:541, 1967); Tijuana River Valley, 1–8 June 1977 (AB 31:1048, 1977), same locality, 19 May 1978; San Diego, 29 May – 2 June 1978 (AB 32:1056, 1978); and Point Loma, 1 June 1979 (AB 33:806, 1979). No specimens have yet been collected in the county.

COMMON YELLOWTHROAT*Geothlypis trichas* (Linnaeus) subsp.

Fairly common to common resident and migrant. The Common Yellowthroat is a characteristic bird of fresh-water or brackish marshes, but it also inhabits riparian woodland. During migration, Yellowthroats visit any dense low vegetation near water or even dry weeds, but are very rare in trees with other migrant warblers. Breeding birds are widespread in the coastal lowland, and probably occur locally in other sections of the county as well. The species has been noted definitely during the breeding season at Julian (Grinnell and Miller 1944), at Cuyamaca Lake (three on 30 April and two on 6 May 1978), at Carrizo Marsh (pair, with female carrying food, on 6 May 1978, P. Unitt), and at Vallecito (Grinnell and Miller 1944). Egg dates (23): 14 April – 14 June.



MAP 101. Breeding Distribution of Common Yellowthroat (*Geothlypis trichas*)

Virtually nothing is yet known of the migrations of the Common Yellowthroat in San Diego. Possibly the wintering population is entirely different from the breeding population. Censuses at San Elijo Lagoon indicate the species is more common in summer than in winter, but large numbers may still be found at times during the latter season (up to 60 along the San Luis Rey River between Bonsall and Oceanside on 28 December 1980, K. Campbell). Wintering birds have been reported only in the coastal lowland. Migrants have been seen in habitats where the birds neither breed nor winter at least from mid-March to late April; these habitats include park shrubbery and desert wash scrub. An odd observation of a migrant is of a male at Point Loma 2–3 June 1979 (P. Unitt); it was singing a song very different from that of local birds, and was perhaps a vagrant from some distant population.

Subspecies: Geographic variation is complex, and many poorly defined or invalid races have been described, confusing the situation. Because of the problem's complexity and lack of extensive comparative material, I sent the 16 San Diego County yellowthroat specimens in SD to Kenneth C. Parkes at the Carnegie Museum, Pittsburgh. He identified ten as *G. t. scirpicola* Grinnell, the race breeding throughout southern California. These ten specimens include a possibly breeding bird from Sorrento near La Jolla on 28 April 1934, a juvenile from Bonita on 9 June 1918, and a migrant from the Anza-Borrego Airport Resort on 17 October 1980. Phillips et al. (1964) considered *scirpicola* a synonym of

G. t. occidentalis Brewster, the race breeding in the Great Basin and Rocky Mountain regions. Parkes identified three specimens as intermediates between *scirpicola* and *G. t. arizela* Oberholser, which breeds from southeastern Alaska south through the Pacific Northwest to central California: San Diego, 29 October 1918; Adobe Falls near La Mesa, 15 September 1931; Borrego Springs, September 1979. One specimen he considered a definite *arizela*: "below Vallecito," 26 April 1896. Two specimens represent *G. t. sinuosa* Grinnell, which breeds only in the salt marshes of the San Francisco Bay area: San Diego, 30 October 1914; San Diego, 3 March 1939. Willett (1933) had reported the first of these as *sinuosa*.

KENTUCKY WARBLER

Geothlypis formosa (Wilson)

Casual fall vagrant. Two records: one photographed at Point Loma on 4 June 1968 (J. T. Craig 1970), and one seen at the mouth of the Otay River (southeast corner of San Diego Bay) on 24 October 1979 (AB 34:203, 1980).

CONNECTICUT WARBLER

Geothlypis agilis (Wilson)

Casual fall vagrant, accidental in spring. Four fall records: Tijuana River Valley, 27 September 1963 (McCaskey 1970d, SD 30776), same locality, 19 September 1974 (AB 29:124, 1975), San Diego, 14 September 1978 (AB 33: 217, 1979), and Point Loma, 4–12 October 1980 (two individuals, AB

35:228, 1981). In spring, a single female was mist-netted at Point Loma on 4 June 1968 (McCaskie 1970d, photograph in SD). The birds hide themselves in the densest low vegetation they can find, under which they creep on the ground.

MOURNING WARBLER

Geothlypis (philadelphia) philadelphia (Wilson)

Accidental. One record, an immature female collected at Point Loma on 3 October 1968 (McCaskie 1970d, SD 36933). The Mourning Warbler is sometimes considered conspecific with its very close relative, the MacGillivray's Warbler. The two forms hybridize where their breeding ranges meet in Alberta (Mayr and Short 1970).

MACGILLIVRAY'S WARBLER

Geothlypis (philadelphia) tolmiei (Townsend)

Fairly common spring migrant, uncommon fall migrant, casual in winter. MacGillivray's Warblers seek weedy brush, park shrubbery, streamside thickets, and desert wash scrub, places where they can conceal themselves in dense low vegetation. Spring migrants occur throughout the county, but there is an apparent gradient of decreasing abundance from east to west. The species is fairly common in the Anza-Borrego Desert and along the east base of the mountains, with a maximum of 25 at Banner on 15 April 1978 (P. Unitt). It is uncommon in the mountain zone but rare in the coastal lowland during spring. The first arrivals usually turn up in early April, with two reports for late March: 27 March 1974, Anza-Borrego Desert (AB 28:851, 1974), and 29 March 1885, Poway (F.E. Blaisdell in Belding 1890). Peak numbers are found from mid-April through early May. Stragglers may be found to late May (one in the Tijuana River Valley on 23 May 1974, J. Dunn); a specimen from Mount Helix (SD 37194) bears the date "June 1967," with no more exact information.

In fall, MacGillivray's Warblers probably occur throughout the county, though almost all reports to date are from the coastal lowland. They move through primarily from mid-August (earliest, one at Old Mission Dam on 13 August 1973, P. Unitt) through mid-October, very rarely as late as mid-November (one in the Tijuana River Valley on 16 November 1963, AFN 18:75, 1964; one at Presidio Park on 19 November 1975, J. Dunn).

The species has been recorded five times in the San Diego area in early winter: Tijuana River Valley, 18 January 1964 (AFN 18:388, 1964), Balboa Park, 24–26 December 1966 (AFN 21:459, 1967), two noted on San Diego Christmas Bird Count, 23 December 1967 (AFN 22:394, 1968), upper Otay River Valley, 20 December 1969 (AFN 24:455, 1970), and Balboa Park, 6–14 December 1974 (AB 29:744, 1975). The report from near Oceanside, 31 December 1962 (AFN 17:359, 1962) should perhaps be disregarded; no observer is cited.

Subspecies: The taxonomy of MacGillivray's Warbler is a bit confused since various authors have divided the species

into four (Phillips et al. 1964), three (Monson and Phillips 1981), or two (Lowery and Monroe 1968) subspecies, or have not divided it at all (Mayr and Short 1970). If subspecies are recognized, nominate *tolmiei* and *intermedia* would be expected to be the commoner forms in San Diego County, but since only one local specimen is preserved in SD, I will contribute nothing more to the subject here.

HOODED WARBLER

Wilsonia citrina (Boddaert)

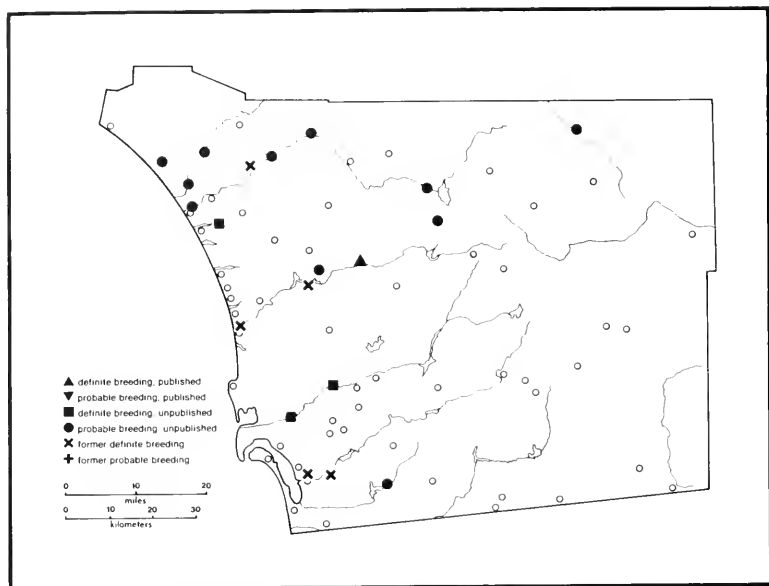
Casual vagrant in fall and spring, accidental in winter. Of the total of ten records, three are for fall: Borrego Springs, 24–28 November 1967; Point Loma, 26 October 1968 (McCaskie 1970d, photographs in SD); and Tijuana River Valley, 24–26 September 1977 (AB 32:263, 1978). The single winter observation is of a female at Sweetwater Dam, 17 December 1977–27 January 1978 (AB 32:401, 1978). There are six reports for spring: Dos Cabezas Spring, Anza-Borrego Desert, 11 May 1973 (AB 27:822, 1973); La Jolla, 20 May 1977 (AB 31:1049, 1977); Point Loma, 18–19 April 1981 (G. McCaskie); same locality, 25 April 1981; Coronado, also 25 April 1981 (E. Copper); and Point Loma, 2 June 1981 (C. Edwards). No specimens have been taken yet in San Diego County.

WILSON'S WARBLER

Wilsonia pusilla (Wilson) subsp.

Common to very common spring migrant; fairly common fall migrant, rare winter visitor, casual or former summer resident. Wilson's Warbler is one of the most numerous migrant warblers in the county, and may be found in any habitat with trees or large shrubs, but it prefers the lower to middle levels of broad-leaved trees. The species occurs in all regions of the county, but there is little information for fall migration outside the coastal lowland. Fall migration begins by mid-August (early report, two at Old Mission Dam on 11 August 1974, P. Unitt), perhaps in early August (Volcan Mountain and Julian, 4–5 August 1908, MVZ 3861 and 3820; Doane Pond, one on 4 August 1981, C. Edwards; possibly locally nesting birds?). After peak abundance in September, migration continues very late into the fall, even into December (five at Otay on 2 December 1973, J. Dunn). The species is rare through late December, and very rare later in the winter, occurring in riparian undergrowth (one near the San Diego Mission, 2 February 1963, AFN 17:359, 1963; one in the Tijuana River Valley, 1–15 February 1970, AFN 24:540, 1970; one at Old Mission Dam, 10–17 February 1974, G. McCaskie; two at Otay, 18 February 1974, J. Dunn).

Wilson's Warblers are especially numerous in spring; a count as high as 74 at San Elijo Lagoon on 4 May 1975 (SEL surv.) is not exceptional. First arrivals are in mid-March (earliest records 6 March 1884, Poway, F. E. Blaisdell in Belding 1890, and 12 March 1972, San Diego, AB 26:808, 1972), and the birds are common in some years by late March (30 in the Tijuana River Valley on 23 March

MAP 102. Breeding Distribution of Yellow-breasted Chat (*Icteria tians*)

1963, G. McCaskie). Largest numbers occur from mid-April through early May. Migration of Wilson's Warbler is prolonged in spring as in fall; the species may still be found uncommonly by the beginning of June, and 7 June (1977, one at Point Loma, P. Unitt) is the latest date known for a migrant.

There is only one definite record of nesting in our region: a nest with four eggs found at San Pasqual on 16 June 1901 (Sharp 1907, WF 72848). Also, Blaisdell reported the species as a "summer resident" at Poway, and Goss noted it as "breeding" at Julian (in Belding 1890). The only recent observation of Wilson's Warbler in summer is of a pair on Reidy Creek in north Escondido from June to 24 August 1980 (K. Weaver).

Subspecies: Most migrants through San Diego County, and presumably the local breeding population, if any, are the bright yellow race *W. p. chrysola* Ridgway, which nests from southwestern British Columbia south through the Pacific states. The duller, more olive-green *W. p. pilcolata* (Pallas) occurs in smaller numbers. This race breeds from Alaska south through the Great Basin and Rocky Mountain regions. Six of the 22 locally collected Wilson's Warblers in SD are *pilcolata*. All were taken between 2 May (1924, 3 km [2 miles] northwest of La Mesa, SD 9325) and 22 May (1961, Spring Valley, SD 30269). A. M. Rea collected a fall *pilcolata* at San Luis Rey (6 October 1962, AMR 5409).

CANADA WARBLER

Wilsonia canadensis (Linnaeus)

Very rare fall vagrant. The 19 records are all from the Tijuana River Valley, Otay Mesa, and Point Loma, except two near La Jolla (24–30 September 1967, McCaskie 1970d; 15 September 1972, AB 27:124, 1973) and one in Ocean-side (7 September 1976, R. Bacon and G. McCaskie). Two records, both for the Tijuana River Valley, involve two individuals (4 October 1969, AFN 24:100c, 1970; 11–13 September 1977, AB 32: 263, 1978); all others are of single individuals. All sightings have been in September and October (6 September, cited above, to 30 October 1971, Tijuana River Valley, AB 26:123, 1972), except for one in the Tijuana River Valley on 15 November 1969 (AFN 24:100c, 1970). No specimens have yet been collected in the county, but photographs of the first bird at La Jolla, and of another in the Tijuana River Valley (28 September 1971) are deposited in SD.

RED-FACED WARBLER

Cardellina rubrifrons (Giraud)

Accidental. Two records: One seen at Old Mission Dam on 26 August 1974 (AB 29:124, 1975), and another photographed at Point Loma 21–24 May 1977 (AB 31:1049, 1977).

PAINTED WHITESTART*Myioborus pictus* (Swainson)

Very rare fall vagrant, casual winter visitor, accidental in spring and summer, but with one record of attempted nesting. This species has occurred nine times along the coast between 28 August (1968, Tijuana River Valley, AFN 23:112, 1969, SD 36800) and 1 October (1966, Salk Institute, La Jolla, AFN 21:80, 1967). Five records are for winter: Lower Otay Lake, 19 January 1959 (AFN 13:325, 1959), Coronado, 21 November – 25 December 1976 (AB 31:224 and 375, 1977), Presidio Park, 2–16 December 1979 (AB 34:308, 1980), Del Mar, 1–16 March 1980 (AB 34:817, 1980), and Mission Valley, 22 February – 14 March 1981 (AB 35:336 and 864, 1981). One at Borrego Springs on 1 April 1979 (AB 33:898, 1979) may have been a spring migrant that did not winter locally. There are two summer records, one involving a single individual along Jaybird Creek near Pauma Valley on 25 June and 6 August 1969 (AFN 23:696, 1970), the other, a pair along Agua Dulce Creek, Laguna Mountains, from 23 May to 29 July 1974. The nest of this pair, with recently hatched chicks, was found on 6 July, but by 13 July the nest was deserted and the chicks were dead (Unitt 1974).

The name "whitestart," instead of "redstart" for warblers of the genus *Myioborus* is gaining currency among the English-speaking ornithologists of South America. The birds of this genus are united by the characteristic of large white areas on the sides of the tail ("staart" in Dutch), so the name "redstart" is quite inappropriate. Resemblance of the American Redstart (*Setophaga ruticilla*) to the whitestarts is the result of convergent evolution (see Parkes 1961).

YELLOW-BREASTED CHAT*Icteria virens auricollis* (Deppé)

Uncommon and localized summer resident. Yellow-breasted Chats are confined to breeding to riparian woodland, mostly in the coastal lowland. Some especially favorable localities are the Santa Margarita River, Las Pulgas Creek (maximum six on 29 June 1978, S. Goldwasser), San Luis Rey River from Oceanside to Pala, vicinity of Old Mission Dam on the San Diego River, and Jamul Creek near Lower Otay Lake. Chats may also occur in a few places in the foothill zone, with observations at Campo (15 May 1884, Belding 1890), Mesa Grande (26 May 1976), and San Luis Rey Day Use Area near Lake Henshaw (23 June 1978, A. Fries). The species undoubtedly breeds at Lower Willows in Coyote Creek Canyon (four on 1 July 1978, S. Goldwasser); possibly also at Carrizo Marsh (three on 6 May 1978), Agua Caliente Springs (one, same date), and Vallecito Creek near Campbell Grade (two, same date, P. Unitt), though these birds could well have been migrants. Yellow-breasted Chats inhabit their nesting areas from mid-April through mid-September, arriving very rarely in early April (earliest recorded, one at Old Mission Dam on 4 April 1975, AB 29:907, 1975, and one at San Diego on 5 April 1885,

Belding 1890). Egg dates (50): 4 May – 6 July.

Chats are seen rarely in dense underbrush as migrants away from breeding localities. In spring such migrants have been noted between 14 April (1973, Tamarisk Grove Campground, ABDSP file) and 23 May (1974, Tijuana River Valley, J. Dunn), in fall, between 13 September (1975, landed on boat in ocean off San Diego, G. McCaskie) and 7 November (1969, Oceanside, AFN 24:100c, 1970). Exceptional stragglers were in the Tijuana River Valley on 16 November 1974 (G. McCaskie) and at Otay on 2 December 1973 (AB 28:694, 1974).

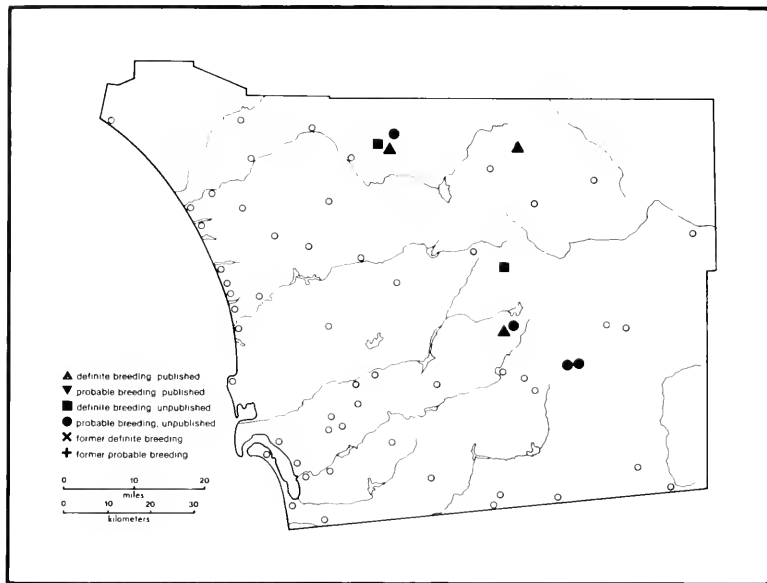
Tanagers

Family *Emberizidae*SUB-FAMILY *THRUPINAE***HEPATIC TANAGER***Piranga flava hepatica* Swainson

Casual vagrant in fall, winter, and early spring. Of the ten Hepatic Tanagers noted in the county, four have been fall vagrants: Point Loma, 1 December 1966 (AFN 21:80, 1967) and 24 October 1970 (AB 25:111, 1971); Tijuana River Valley, 30 October 1975 (AB 30:129, 1976) and 10 November 1979 (AB 34:203, 1980). At least four individuals have remained to winter. One first observed in Poway on 18 December 1960 was collected on 31 December (Huey 1961b, SD 30257), and another was seen in the Mission Hills area of San Diego from 13 November 1967 to 8 March 1968 (AFN 22:480, 1968). At the Rosicrucian Fellowship in Oceanside, a female was present 1 January – 6 February 1977 (AB 31:375, 1977), 7 January – 18 March 1978 (AB 32:401, 1978), and was joined by a male 27 November 1978 – 1 March 1979 (AB 33:316, 1979). Presumably the same male returned alone the following two winters: 9–24 February 1980 (AB 34: 308, 1980) and 15–28 December 1980 (AB 35:337, 1981). The two early spring records are of birds that possibly also wintered locally: Point Loma, 9 April 1966 (AFN 20:547, 1966), and Agua Caliente Springs, 9 March 1974 (AB 28:694, 1974).

SUMMER TANAGER*Piranga rubra rubra* (Linnaeus)

Rare fall migrant and winter visitor, very rare spring migrant, casual through summer. Fall migrant Summer Tanagers have been found at several places in the San Diego area, but most often at Point Loma and in the Tijuana River Valley. There is also one fall report from the Anza-Borrego Desert, of one at Yaqui Well on 22 November 1962 (AFN 17:71, 1963). Two to five are generally noted in the county each fall, with a maximum of 10 in 1977. Most migrants occur from late September through early November, with early dates of 9 September (1977, four in the Tijuana River Valley, L. C. Binford) and 11 September (1975, one at La Jolla, J. Butler). The latest date for birds which probably



MAP 103. Breeding Distribution of Western Tanager (*Piranga ludoviciana*)

did not remain to winter is 22 November (at Yaqui Well, cited above, and 1975, one at Presidio Park, J. Dunn).

In winter, Summer Tanagers, like Western Tanagers, occur principally in parks and residential areas in the San Diego area. There are several reports from other lowland localities, however: Pauma Valley (one on 9 January 1953, Huey 1954), San Luis Rey (one on 5 March 1963, Rea 1967), Carlsbad (one on 4 January 1970, 24:541, 1970), and Oceanside (three reports). One or two are found almost every winter, up to five in 1962–1963 (AFN 17:359, 1963). Dates for known wintering individuals extend from 15 November (1977, one in Balboa Park, AB 32:401, 1978) to 8 April (1968, one at Point Loma, AFN 22:577, 1968); one at Coronado on 12 April 1979 (AB 33:807, 1979) had probably also wintered locally.

In spring, the species occurs mostly in late May and early June, with extremes 17 May (1969, one at Point Loma, AFN 23:627, 1969) and 12 June (1966, same locality, AFN 20:600, 1966), exceptionally 18 June (1977, one on La Posta Truck Trail, AB 33:1191, 1977). Most spring reports are from Point Loma, but the species has been seen also at this season at Carlsbad (8 June 1977, C. Edwards) and Agua Caliente Springs (27 May 1973, AB 27:822, 1973). The Summer Tanager is not reported every spring, though four were noted in 1969, and five in 1977.

At Lower Willows in Coyote Creek Canyon, a single Summer Tanager was seen from 9 to 31 May 1980 (AB 34:817, 1980). Even though this is within the range of dates

of spring migrants, it is mentioned separately because it was in riparian woodland similar to nesting habitat of Summer Tanager elsewhere in southeastern California. Continued study of this area might reveal it to be a sporadic breeding locality.

The species is definitely known to remain through the summer at only one spot: riparian woodland in the vicinity of Old Mission Dam. It has recurred here frequently enough to suggest the birds are not random vagrants: one on 18 May 1968 (AFN 22:577, 1968), up to two from 8 July to 18 August 1973 (G. McCaskie), up to three from 4 August to 25 September 1974 (D. Ramsey), up to two from 29 June to 22 August 1977 (AB 31:1191, 1977), and one from 3 to 13 June 1978 (AB 32:1057, 1978). No evidence of breeding activity has been seen, however.

Subspecies: All specimens of Summer Tanager from San Diego County are *P. r. rubra*, which breeds from central Texas and southeastern Nebraska east through the eastern United States, rather than *P. r. cooperi* Ridgway, breeding in the southwestern United States and northern Mexico (Rea 1970). This beautifully illustrates the fallacy of assuming that migrants or vagrants originate from the nearest breeding population. Still, spring birds in the Anza-Borrego Desert should be examined in hand for *cooperi*, which differs from nominate *rubra* by its larger bill and paler coloration. The subspecific identity of the summering birds at Old Mission Dam is a particularly intriguing unanswered question.

SCARLET TANAGER*Piranga olivacea* (Gmelin)

Casual fall vagrant, accidental in spring. Seven fall records, between 14 October and 17 November: five on Point Loma (14–21 October 1967, AFN 22:92, 1968; 29 October 1968, AFN 23:112, 1969; 7–17 November 1969, AFN 24:100c, 1970; 17–19 October 1977, AB 32:264, 1978; 24 October 1980, AB 35:228, 1981), one in the Tijuana River Valley (4 November 1967, AFN 22:92, 1968), and one on Otay Mesa (21 October 1979, AB 34:203, 1980). The single spring bird was an adult male observed at Point Loma 26–28 May 1979 (AB 33:807, 1979). The records for Point Loma in 1968 and 1980 were documented with photographs, but no specimen has been collected yet in San Diego County.

WESTERN TANAGER*Piranga ludoviciana* (Wilson)

Common to very common spring migrant, uncommon to fairly common summer resident, fairly common fall migrant, uncommon and localized winter visitor. During spring migration, Western Tanagers stop in a great variety of trees throughout the county. They seem especially attracted to certain non-native flowering trees such as bottlebrush, silk-oak (*Grerillea*), and eucalyptus, with the result that the largest numbers are seen in parks and residential areas in the coastal lowland. Abundance of spring migrants varies somewhat from year to year with occasional immense concentrations: up to 500 at Pauma Valley on 16 May 1942 (E. Beemer), 250 in the Tijuana River Valley on 4 May 1963 (G. McCaskie), and 1000 at Bonita on 1 May 1964 (AFN 18:488, 1964). Migrants arrive in mid-April (earliest recorded, one at Point Loma on 10 April 1977, G. McCaskie), build swiftly to peak abundance in early May, then decrease through early June (latest, four at Point Loma on 6 June 1974, J. Dunn, and one at Old Mission Dam on 13 June 1978, C. Edwards).

Breeding Western Tanagers are restricted to the mixed coniferous-oak woodland of the mountain zone. They were fairly common on Hot Springs Mountain in 1980 (18 on 4 June, 9 on 24 June, 10 on 22 July, including fledglings, Unitt 1981). In the other mountain areas where they are known to breed (Palomar, Julian, Cuyamaca, Laguna), the tanagers are definitely uncommon. Egg dates (5): 6–27 June.

In fall, the species is again widespread throughout the county, but occurs in considerably lesser abundance than in spring. A concentration as large as 35 (Point Loma, 13 September 1978) is unusual for fall. Migrant Western Tanagers return early in the fall, by late July: one at Silverwood Wildlife Sanctuary on 28 July 1973; one at Old Mission Dam on 28 July 1974 (P. Unitt). Most birds move through in August and September, but there is no strong peak as in spring. By mid-October, the species is rare, and 3 November (1963, one in the Tijuana River Valley, G. McCaskie) is the latest date for a bird that probably did not remain to winter.

Wintering Western Tanagers are known only from parks and residential neighborhoods in the San Diego area. Greenwood and Mt. Hope Cemeteries, Presidio Park, and especially Balboa Park are the most favorable places, with up to 10 at the last locality on 15 December 1979 (L. Bevier, D. Herron). Other known winter localities are Point Loma (several reports), Spring Valley (one on 22 January 1967, AFN 21:459, 1967), East San Diego (one on 13 February 1947, Crouch 1947), National City (one from 12 February to 10 April 1922, on 14 January 1926, and from 1 to 23 February 1927, Johnson 1922 and 1928, SD 11331–25 February according to specimen label, Coronado (three on 15 December 1979, R. Webster), and Imperial Beach (one on 25 February 1973, AB 27:665, 1973). The wintering of Western Tanagers in southern California is a rather recent event, related to urbanization and the widespread cultivation of exotic plants which flower and fruit through the winter. The reports from National City (Johnson 1922 and 1928) are the earliest winter records for San Diego County, and only since 1956 have Western Tanagers been noted annually.

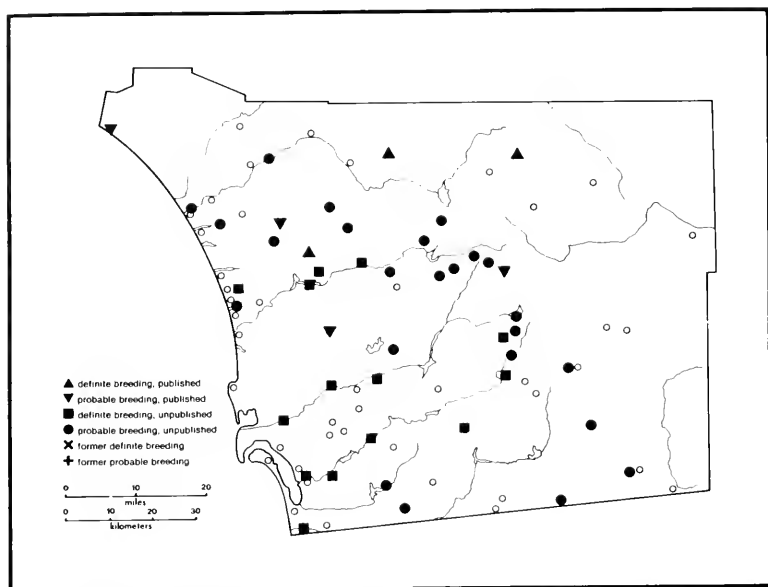
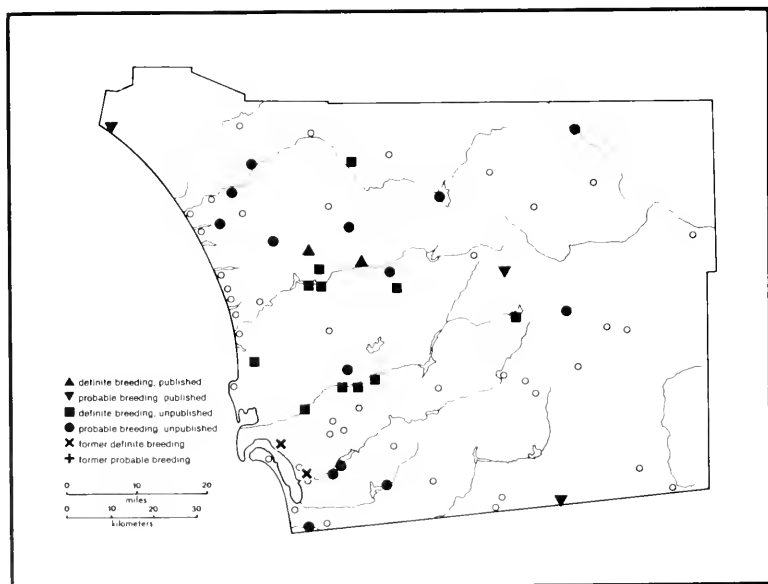
Cardinaline Grosbeaks and Buntings

Family *Embeizidae*SUB-FAMILY *CARDINALINAE***ROSE-BREADED GROSBEEK***Phœticus ludovicianus* (Linnaeus)

Rare fall migrant, very rare winter visitor, rare spring migrant, casual in summer. Two to four Rose-breasted Grosbeaks usually are noted in the San Diego area each fall, with up to six in 1975 and 1976. Most occur from late September to early November. The earliest recorded date is 15 September (1968, one at Point Loma, AFN 23:112, 1969), while 30 November (1966, one at Point Loma, AFN 21:80, 1967) is the latest for a bird that probably did not remain through the winter.

Wintering Rose-breasted Grosbeaks have been found mostly in parks and residential areas in the San Diego area; also at Poway (9–10 April 1963, AFN 17:436, 1963) and at Del Mar (one or two from 8 to 21 February 1980, AB 34:308, 1980). One or two are found in most winters, with a maximum of four in 1979–1980 (AB 34:308, 1980). Known dates for wintering birds extend from 24 November (1979, National City, AB 34:308, 1980) to 13 April (1963, Point Loma, McCaskie et al. 1967c).

The species has been noted annually as a spring migrant or vagrant since 1973, with up to seven in 1977. Most have been found from late May through mid-June. The earliest date is 2 May (1981, one at Bow Willow Ranger Station, ABDSP file), while late stragglers extend far into July, and on one occasion, into August (El Cañon, 29 July – 10 August 1969, AFN 23:696, 1969; La Jolla, mid-July 1966, SD

MAP 104. Breeding Distribution of Black-headed Grosbeak (*Pheucticus melanocephalus*)MAP 105. Breeding Distribution of Blue Grosbeak (*Passerina caerulea*)

36043; Green Oak Ranch near Vista, 24 July 1976, AB 30:1005, 1976; and Julian, 20–22 July 1980, AB 34:931, 1980). Most spring reports are from the San Diego area, especially Point Loma, but several others cover all regions of the county.

BLACK-HEADED GROSBEAK

Pheucticus melanocephalus maculatus (Audubon)

Common spring migrant, fairly common summer resident and fall migrant, very rare winter visitor. Breeding Black-headed Grosbeaks occupy all the major woodland habitats in San Diego County: riparian, live oak, and mixed conifer-oak. Their range encompasses the entire coastal slope wherever these habitats are found, from near sea level as in Mission Valley (eggs, WF) and the Tijuana River Valley (male singing from nest, 3 June 1977) to near the summits of Hot Springs Mountain (17 on 22 July 1980, P. Unitt), and Cuyamaca Peak (eggs, WF). Egg dates (36): 29 April – 4 July; Sharp (1907) reported 28 April. The species also occurs in the Anza-Borrego Desert as a fairly common spring migrant. The earliest arrivals usually appear in the last few days of March; 23 March (1975, one at Old Mission Dam, J. Dunn; 1979, San Diego, AB 33:804, 1979) is the earliest known date. From mid-April through early May, migrants are common, then decrease in numbers through late May. An exceptionally late migrant was at Point Loma on 3 June 1974. Fall migrants reappear in non-breeding areas very early, by late July (one in the North Park area of San Diego on 25 July 1974, J. Dunn), and are most numerous in August and September. By early October, the species is uncommon, and 19 October (1975, one in the Tijuana River Valley, G. McCaskie) is the latest date for a bird probably not attempting to winter.

In winter, Black-headed, like Rose-breasted Grosbeaks, have occurred principally in parks and residential areas around San Diego; there are also two reports from Pauma Valley: early December 1953 (AFN 8:43, 1954), and December 1954 – January 1955 (AFN 9:289, 1955). Notice that the western species is somewhat less frequent in winter than its close eastern relative: about 12 individual Black-headed versus about 17 Rose-breasted at this season. Winter records of Black-headed span the whole season, from 22 November (1975, Presidio Park, J. Dunn) to 17 March (1968, Point Loma, AFN 22:480, 1968).

BLUE GROSBEAK

Passerina caerulea salicaria (Grinnell)

Uncommon summer resident, rare spring and fall migrant away from breeding localities, casual winter visitor. The Blue Grosbeak is a bird of riparian woodland edges, and thickets of willows and mulefat growing around streams, ponds, and lakes. It seems to need both dense, low vegetation near water and nearby open grassy or weedy areas. Its main breeding areas are in the valleys of the coastal lowland, but it occurs and nests rarely at higher elevations as well: Lake

Henshaw (10 June 1970, E. Beemer; 26 April 1980, E. Copper), Julian (Grinnell and Miller 1944), Cuyamaca Lake (eggs on 18 June 1921, WF), and Campo (15 May 1884, Belding 1890). One at the summit of Palomar Mountain on 16 July 1979 (AB 33:898, 1979) was most likely a non-breeding or post-breeding wanderer. Blue Grosbeaks probably breed in the Anza-Borrego Desert at Lower Willows, Coyote Creek Canyon, (one on 1 July 1978, S. Goldwasser; four reports from May to July in ABDSP file) and possibly at La Puerta (=Mason) Valley (29 May 1927, SD 26866). Egg dates (19): 7 May – 7 July; E. Beemer saw eggs still being incubated at Pauma Valley on 9 July 1948. Spring arrival is usually in late April, sometimes in mid-April; 12 April (1979, San Diego, AB 33:804 1979) is the earliest reported date. Blue Grosbeaks leave their breeding territories in early September, but fall migrants may be seen rarely as late as mid-October (latest, one in the Tijuana River Valley on 19 October 1964, AB 19:82, 1965).

The species has been reported four times in winter: near Escondido, 20–22 February 1957 (AFN 11:291, 1957); near San Ysidro (=Otay Mesa), 29 January 1964; Solana Beach, 22 February – 13 March 1964 (McCaskie et al. 1967c); and along the Sweetwater River in National City, 12 December 1979 (AB 34:308, 1980).

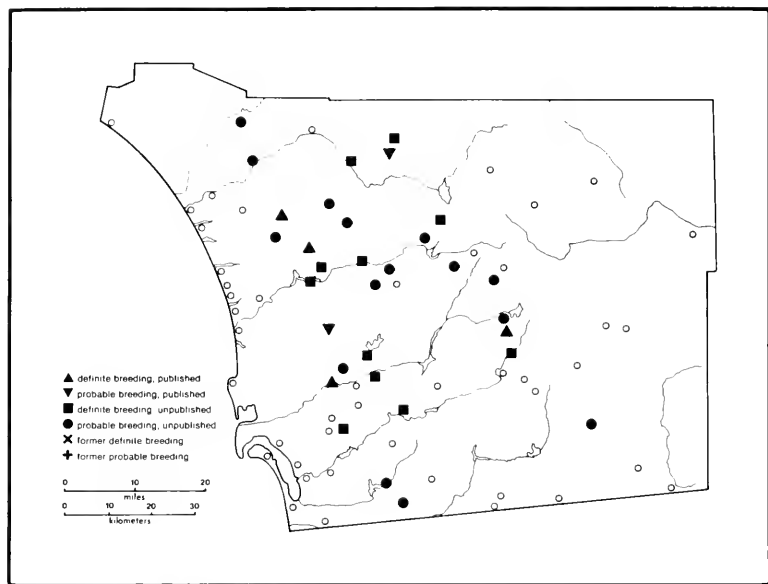
INDIGO BUNTING

Passerina cyanea (Linnaeus)

Rare fall migrant, accidental winter visitor, very rare spring migrant, casual summer visitor. The Indigo Bunting occurs in the same situations as its close relative, the Lazuli Bunting, usually thickets or small trees adjacent to patches of weeds or open grass. Most fall reports are from the Tijuana River Valley, Otay Mesa, and Point Loma, with single birds elsewhere near Lakeside (26 September 1972, AB 27:124, 1973), in Presidio Park (19 November 1975), and Balboa Park (22 November 1975, J. Dunn). One or two individuals are found almost every fall; the maximum is four in 1975. The records are strongly concentrated in late September and early October, but extend from 4 September (1977, one at Otay Mesa, P. Unitt) to 27 October (1978, one in the Tijuana River Valley, C. Edwards), except for the very late birds at Presidio and Balboa Parks mentioned above. Two specimens have been collected in fall: Tijuana River Valley, 6 September 1963 (McCaskie et al. 1967c; SD 30782) and Point Loma, 29 September 1967 (SD 36357).

The two winter records are of an individual in Balboa Park 10–23 December 1967 (AFN 22:480, 1968), and another at San Marcos on 9 March 1976 (AB 30:770, 1976).

Indigo Buntings have been reported 10 times in spring, mostly in the San Diego area, and especially at Point Loma, but also at Ramona (23 May 1956, AFN 10:364, 1956) and Japatal Valley (21 May 1973, AB 27:822, 1973). Most of the spring reports are for late May; 13 May (1975, Torrey Pines State Park, AB 29:911, 1975) and 24 June (1969,



MAP 106. Breeding Distribution of Lazuli Bunting (*Passerina amoena*)

Point Loma, AFN 23:696, 1969) are the extreme dates. The single spring specimen was collected in the Pacific Beach section of San Diego on 23 May 1965 (SD 35435).

The species has been noted in summer on three occasions. One was in the Tijuana River Valley on 7 August 1976 (G. McCaskie), and another was at Palomar Mountain on 20 July 1979 (AB 33:898, 1979). Especially interesting was one in Spring Canyon near Old Mission Dam 2–10 June 1973 (AB 27:920, 1973). It was paired with a female Lazuli Bunting (P. Unitt), and this female was later seen with a brood of fledglings.

LAZULI BUNTING

Passerina amoena (Say)

Fairly common migrant and summer resident. Lazuli Buntings prefer woodland edge habitats. Their habitat requirements combine a need for trees for high song perches, shrubbery for nest concealment, and meadows or open grassy or weedy patches for foraging. Edges of riparian, oak, or coniferous woods all meet these requirements. During migration the species is less restricted, visiting agricultural land, parks, and broken chaparral, but it still shows a preference for open areas adjacent to dense low vegetation. The breeding range of the Lazuli Bunting covers the mountain and foothill zones, and at least the inland valleys of the coastal lowland. It is not definitely known to nest

in the immediate vicinity of the coast, though Belding (1890) called it a "rare summer resident" at San Diego. Two males in the Tijuana River Valley on 17 May 1981 (P. Unitt) appeared to have established territories. Egg dates (20): 6 May – 27 June.

Spring migrants arrive in numbers in mid-April, with the earliest birds in early April. The earliest recorded dates are 29 March 1968 (San Diego, AFN 22:574, 1968) and 1 April (1977, one at Old Mission Dam, AB 31:1046, 1977). Lazuli Buntings continue to migrate at least to mid-May (one at Presidio Park on 13 May 1974, J. Dunn), and an exceptionally late migrant or wanderer was at Point Loma on 15 June 1977 (P. Unitt). Spring migrants may be seen fairly commonly in the Anza-Borrego Desert, as well as on the coastal slope.

Lazuli Buntings leave their breeding territories early in the summer, at least in the coastal lowland—in mid or late July at Old Mission Dam. Fall migrants are evident at non-breeding localities from early August to early October, rarely to late October. Latest dates for the species are 24 October (1977, one at Point Loma, P. Unitt), and 4 November (1962, one in the Tijuana River Valley, G. McCaskie).

The report of Lazuli Buntings at San Diego in mid-December 1965 (AFN 20:334 and 461, 1966) is best disregarded, considering the lack of winter records from anywhere else in southern California.

PAINTED BUNTING

Passerina ciris pallidior Mearns

Very rare fall vagrant. Immature Painted Buntings have been noted eight times in the county, six times in the Tijuana River Valley, and twice at Point Loma (22 September 1963, McCaskie et al. 1967c; 11 September 1975, AB 30:129, 1976). Dates cover the interval from 11 September to 10 November (1962, Tijuana River Valley, McCaskie and Banks 1964, SD 30488). One additional Tijuana River Valley record is documented with a specimen (28 September 1963, SD 30783); the other sight records are 13–14 September 1962, 11 October 1962 (McCaskie and Banks 1964), 21–24 September 1974, and 12 October 1974 (AB 29:124, 1975).

Adult male Painted Buntings have been reported on several occasions, but most of these had probably escaped from captivity; one photographed in winter at Del Mar showed fading of the red parts of the plumage, a common occurrence among cardinaline finches kept in captivity. Still, some adult males may reach California as wild vagrants, such as one at Vallecito on 4 October 1977 (AB 32:264, 1978).

Subspecies: McCaskie and Banks (1964) reported that R. C. Laybourne had determined that the 10 November 1962 specimen was "like the eastern form *ciris*, except the tail measurement tends toward the western form *pallidior*." However, the specimens were later examined by R. W. Storer, who found that "both specimens are within the size range of both races but closer to the western race *pallidior* in coloration" (McCaskie et al. 1967c).

DICKCISSEL

Spiza americana (Gmelin)

Rare fall vagrant, accidental in winter. Dickcissels are found usually in agricultural fields or patches of weeds. All fall reports are from the Tijuana River Valley, Otay Mesa, and Point Loma, except one at Camp Pendleton (3 October 1964, AFN 19:82, 1965). One to four are usually found each fall, with none at all in occasional years such as 1973 and 1974. In 1963 however, 12 were noted in the Tijuana River Valley between 20 September and 1 October, including seven on 27 September (McCaskie et al. 1967c). Occurrences are concentrated from late September to mid-October. Earliest reports are of one in the Tijuana River Valley on 7 September 1980 (AB 35:228, 1982), and three there on 9 September 1976 (G. McCaskie); latest, one at Point Loma 28–29 October 1977 (AB 32:264, 1978), and one at Otay Mesa 2 November 1968 (AFN 23:112, 1969). The single specimen for the county was collected in the Tijuana River Valley on 20 September 1963 (SD 30784).

The one bird seen in winter frequented a feeder in the Kearney Mesa area of San Diego from 2 December 1963 to 16 March 1964 (McCaskie et al. 1967c).

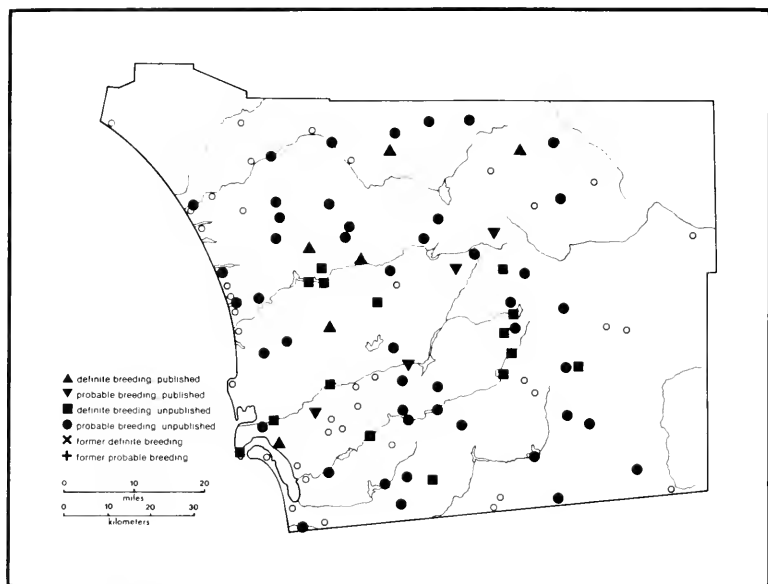
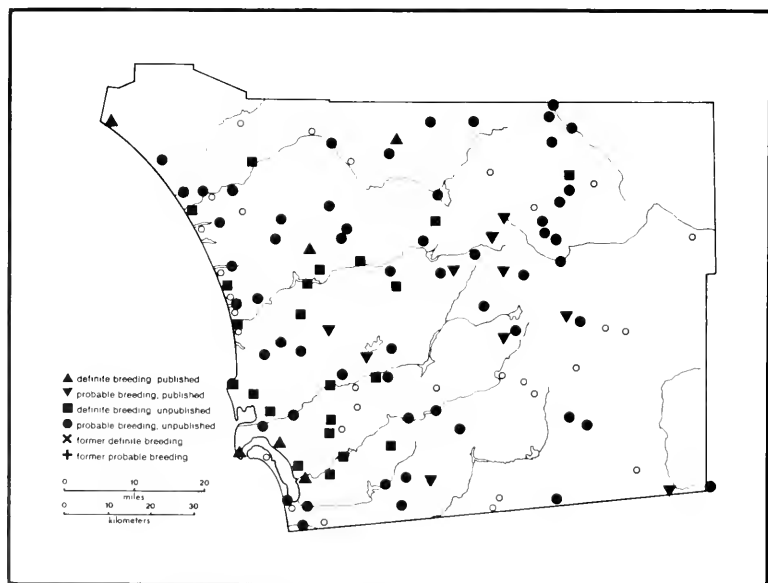
Emberizine Sparrows,
etc.Family *Emberizidae*
SUB-FAMILY *EMBERIZINAE*

GREEN-TAILED TOWHEE

Pipilo chlorurus (Audubon)

Uncommon fall migrant, rare winter visitor and spring migrant, uncommon and very localized summer resident. Green-tailed Towhees frequent dense weed patches, park shrubbery, and chaparral. Fall migrants are known mostly from the coastal lowland, with one record for the foothill zone (Witch Creek, 25 September 1909, Willett 1912). Earliest fall arrivals are in early September (one in the Tijuana River Valley on 5 September 1976; one at Point Loma on 7 September 1974, J. Dunn). The species is seen most frequently in late September and early October, (maximum of five on 29 September 1962, G. McCaskie), then it decreases to become rare by mid-November. Wintering birds have been found in the San Diego area, as far inland as Hillsdale near El Cajon (31 January 1918, SD 34031), but mostly in weed patches near the coast. The only winter report outside the San Diego area is of one at the Santa Margarita River mouth on 1 January 1979 (E. Copper). Wintering Green-tailed Towhees are usually seen singly; four at Imperial Beach on 20 December 1969 (J. Sheppard), with four others elsewhere that day in the Tijuana and Otay River Valleys (AFN 24:454, 1970) is the maximum for that season. The species has been seen in winter through early March (one in the Tijuana River Valley on 10 March 1962, G. McCaskie). A gap in occurrence follows until mid-April, when a few spring migrants appear in the coastal lowland and also in the Anza-Borrego Desert. Spring dates extend from 16 April (1966, one in the Tijuana River Valley, G. McCaskie; 1978, one at Yaqui Well, K. Garrett) to 7 May (1932, San Felipe Narrows [7 km east of Tamarisk Grove Campground], SD 15736) and 9 May (1975, Agua Caliente Springs, A. Fries).

Green-tailed Towhees recently have been discovered in summer in chaparral mixed with patches of grass and scattered small pines near the summits of the highest peaks of San Diego County. On Cuyamaca Peak, B. Cord found six on 29 May 1974; up to six were seen from 21 June to 27 August 1978 (D. Povey), and a maximum of 12 was reported on 17 June 1980 (AB 34:931, 1980). A juvenile was accompanying adults on 29 July 1978 (AB 32:1210, 1978). On Hot Springs Mountain, a single bird was found on 4 June 1980, and two were together on 24 June 1980 (Unitt 1981). A single adult was seen at the Palomar Observatory on 24 August 1981 (C. Edwards).

MAP 107. Breeding Distribution of Rufous-sided Towhee (*Pipilo erythrophthalmus*)MAP 108. Breeding Distribution of Brown Towhee (*Pipilo fuscus*)

RUFIOUS-SIDED TOWHEE

Pipilo erythrophthalmus megalonyx Baird

Common resident. The Rufous-sided Towhee is a characteristic inhabitant of chaparral, preferring denser and taller stands with leaf litter on the ground. It occurs in all woodland habitats wherever these have an understory of shrubbery. The largest numbers occur in the foothill and mountain zones, but the species' range covers the entire coastal slope excluding the Coronado Peninsula, and extends east to Piñon Spring in Indian Canyon (one in mid-March 1973), Peña Spring (one singing in late April 1973, ABDSP file), Banner (six on 15 April 1978, P. Unitt), La Puerta (= Mason) Valley (28 December 1926, SD 27871) and Boulevard (eight on 26 June 1978, P. Unitt). Egg dates (31): 11 March – 4 July.

The local breeding population is probably sedentary. Winter visitors presumably from farther north occur rarely in desert wash scrub in the northern Anza-Borrego Desert (at least from 14 September (1956, Borrego Palm Canyon Campground) to 16 February (1974, Salvador Canyon, ABDSP file).

BROWN TOWHEE

Pipilo fuscus senicula Anthony

Common to very common resident. The Brown Towhee is found in all non-desert habitats containing shrubs: chaparral, coastal sage scrub, parks, residential and agricultural areas, woodland edges and undergrowth, and desert-edge scrub. On the average, Brown Towhees prefer drier and more open situations than do Rufous-sided Towhees, but both species occur together at many places. Brown Towhees are uncommon in the mountain zone, but still have nested as high as 1890 m (6200 feet) elevation on Palomar Mountain (29 June 1980, AB 34:931, 1980). They occupy the entire coastal slope except the Coronado Peninsula, and range east on the desert slope to Middle Willows in Coyote Creek Canyon (18 May 1974), Borrego Palm Canyon (pair copulating on 20 February 1972, ABDSP file), Peña Spring (eight on 10 September 1976, P. Unitt), Angelina Spring (March 1973, ABDSP file), Scissors Crossing (two on 2 February 1978), Vallecito Creek at the east end of Mason Valley (one on 6 May 1978, P. Unitt), and extreme southwestern Imperial County (three on 10 April 1976, G. McCaskie). The species is renowned for its sedentary nature, mated pairs usually remaining together for life on one territory. Egg dates (72): 16 March – 2 July; Sharp (1907) reported 12 July.

BLACK-THROATED SPARROW

Aimophila bilineata deserticola (Ridgway)

Fairly common resident. Black-throated Sparrows occur in creosote bush scrub, desert wash scrub, and desert-edge scrub in eastern San Diego County. They are most common in desert washes in the Anza-Borrego Desert (20 at Yaqui Well on 22 January 1963, G. McCaskie; 15 at

Mountain Palm Springs on 5 September 1978, P. Unitt). They range west to near Ranchita (26 May 1976, A. Fries), San Felipe Valley (4 January 1918, SD 34303-4), Mason Valley (eggs on 11 April 1932, WF), and 2.4 km (1.5 miles) west of Jacumba (one on 26 June 1978, P. Unitt). Egg date (1): 11 April.

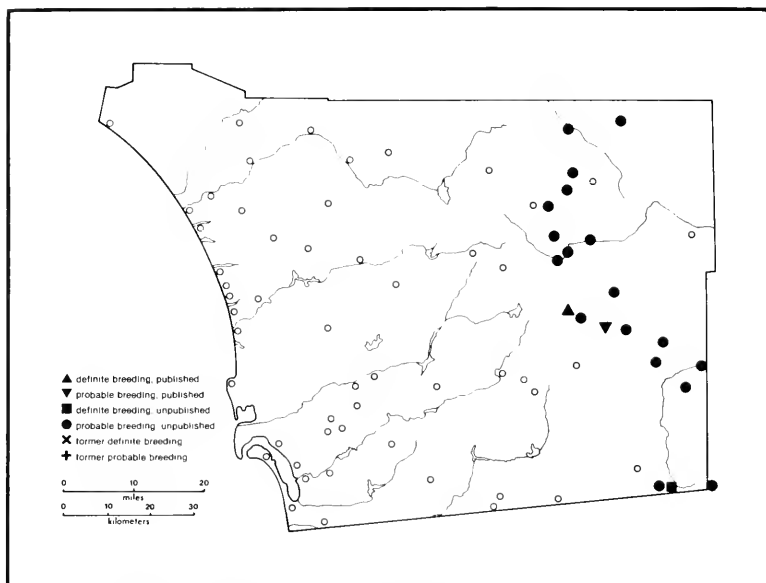
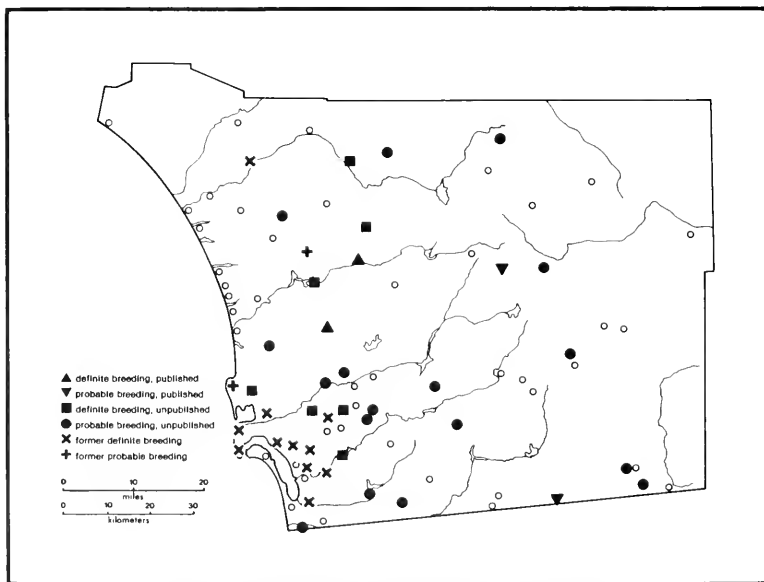
Black-throated Sparrows also occur very rarely as fall migrants near the coast, with eight immatures noted at Point Loma and in the Tijuana River Valley between 29 August (1972, Tijuana River Valley, AB 27:125, 1973) and 11 October (1973, two at Point Loma AB 28:111, 1974). A specimen was collected at Encanto on 10 September 1974 (SD 38915). In winter, a single adult was seen near Sweetwater Dam on 21 December 1969 (AFN 24:541, 1970).

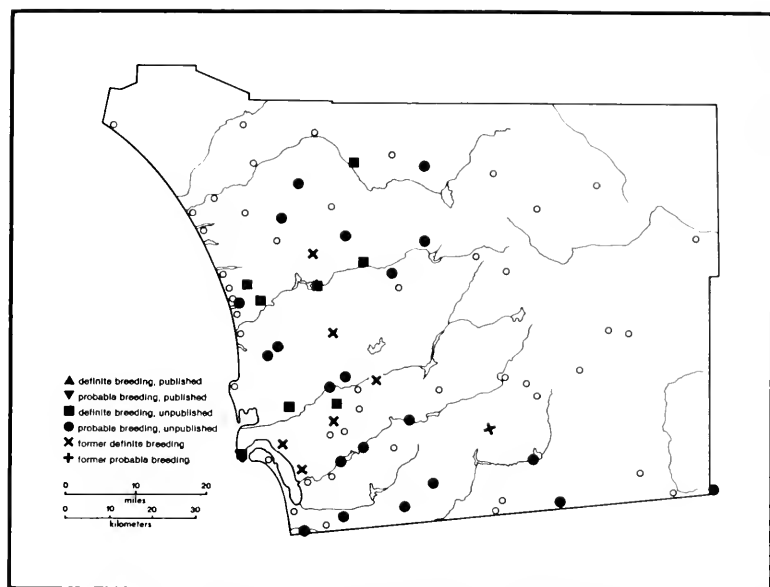
SAGE SPARROW

Aimophila belli (Cassin) subsp.

Uncommon to fairly common but localized resident. Sage Sparrows live in chaparral, especially dense stands in sunny, dry areas, but are absent from many tracts of seemingly suitable habitat. In some places they inhabit coastal sage scrub, as on Spooners Mesa south of the Tijuana River Valley (up to eight on 21 May 1978, P. Unitt). Grinnell and Miller (1944) reported that the species has a special attachment to chamise (*Adenostoma fasciculatum*), but data from San Diego County do not particularly support this. Sage Sparrows are probably most numerous in the foothill zone, but have been recorded at many places in the coastal lowland, and range up into the mountain zone (Palomar Mountain, 20 August 1950, E. Beemer). Points on the eastern edge of the species' range are juniper woodland between Banner and Scissors Crossing (29 April 1972, S. Terrill), 6 km (4 miles) northwest of Mount Laguna (July 1973, P. Unitt), and Hipass (3 April 1932, SD 15727). Egg dates (74): 25 March – 11 June; Sharp (1907) reported finding a nest at San Pasqual on 18 June 1905.

Subspecies: Our resident race, to which the foregoing account applies, is *A. b. belli* Cassin, which breeds mostly on the coastal slope from Trinity County south into northwestern Baja California. It seems to be sedentary, but apparently wanders occasionally, since two were seen at Point Loma, a locality where this race does not breed, on 4 and 5 October 1981 (R. Webster and C. Edwards). Conspicuously paler birds occur as uncommon to rare winter visitors in desert wash scrub in the Anza-Borrego Desert, with three records farther west: San Felipe Valley, 4 January 1918 (SD 34348); Ballena, 12 October 1889 (SD 1078), and San Luis Rey River near Guajome Lake, 1 January 1979 (R. Webster). Dates for these visitors extend from 12 October (at Ballena, cited above) to 16 March (1975, two in the Borrego Sink, G. McCaskie). These birds could be either of two races, *A. b. nevadensis* (Ridgway), which breeds in the Great Basin and Rocky Mountain region, or *A. b. canescens* Grinnell, which breeds in the foothills surrounding the San Joaquin Valley, on the

MAP 109. Breeding Distribution of Black-throated Sparrow (*Amphispiza bilineata*)MAP 110. Breeding Distribution of Sage Sparrow (*Amphispiza belli*)



MAP 111. Breeding Distribution of Rufous-crowned Sparrow (*Aimophila ruficeps*)

northern slopes of the Transverse Ranges, and in Inyo County. The two races differ in size, *nevadensis* being the larger, but specimens must be sexed accurately, since male *canescens* are as large as female *nevadensis*. Of the five skins of migrant Sage Sparrows in SD, four are *nevadensis*; one is not identifiable because it was not sexed.

CASSIN'S SPARROW

Aimophila cassinii (Woodhouse)

Accidental. One was seen near El Cajon 15–30 May 1970, 8–11 May 1976 (AB 30:893, 1976), and 10–12 June 1978 (AB 32:1057, 1978); possibly the same individual returned each year. The bird was photographed in 1976 and its song was tape-recorded in 1970 and 1976 by S. Oberbauer and M. Evans. The exact locality was a hillside vegetated principally with flat-top buckwheat (*Eriogonum fasciculatum*) on the south side of Dehesa Road 1.6 km (1 mile) east of Granite Hills Drive. The habitat has since been destroyed for a residential development.

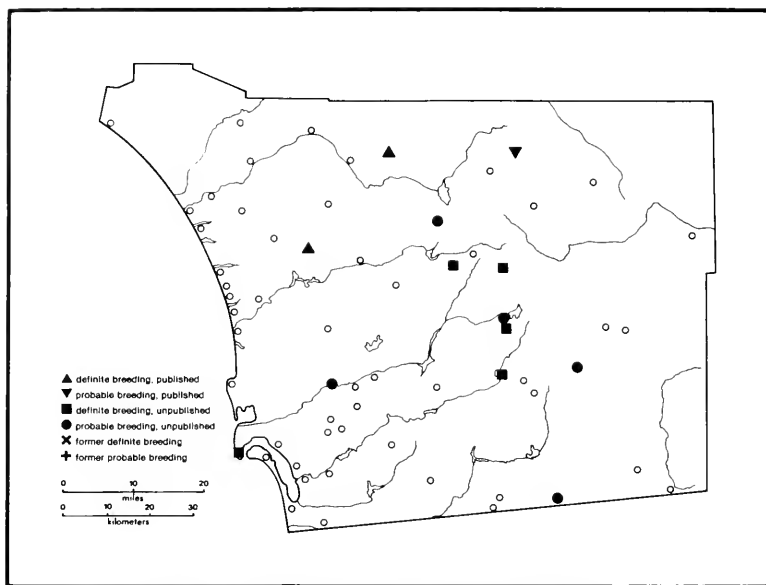
RUFIOUS-CROWNED SPARROW

Aimophila ruficeps lambi Grinnell

Uncommon to fairly common but localized resident. The Rufous-crowned Sparrow is a characteristic bird of the coastal sage scrub. Within this habitat, it favors places that are steep and rocky. It also seeks scattered bunches of grass in sage scrub, and it colonizes grass that grows as a

successional stage following brush fires. The known range of Rufous-crowned Sparrow is virtually coincident with extensive stands of coastal sage scrub in the coastal lowland. Single birds have been noted in rocky areas at two localities farther east, at Lake Morena (29 July 1977, J. Dunn) and in extreme southwestern Imperial County (18 March 1978, P. Unitt), and in grassland at Dyche Valley (4 August 1981, C. Edwards). This suggests the species extends very sparsely into the foothill and desert-edge zones. Two especially favorable localities are in Los Peñasquitos Canyon 3–6 km (2–4 miles) east of its mouth (16 on 26 October 1979) and on hillsides above the Sweetwater River 2–3 km (1–2 miles) south of Dehesa (18 on 7 November 1979, P. Unitt). The amount of habitat suitable for Rufous-crowned Sparrows in San Diego County has been decreased greatly with the widespread destruction of sage scrub habitat for agricultural and urban development. This bird seems more adaptable, however, than some other sage scrub inhabitants such as the California Gnatcatcher and Cactus Wren. More study of rocky or grassy habitat in the foothill zone might alter the present concept of the Rufous-crowned Sparrow's distribution considerably. Egg dates (34): 17 March – 7 June; Sharp (1907) found a nest with two chicks and two "almost piped" eggs near Escondido on 11 March 1900.

Subspecies: *A. r. lambi*, which occurs in southwestern California and northwestern Baja California from Santa Barbara County south to latitude 30° 30' N. The name *A.*

MAP 112. Breeding Distribution of Chipping Sparrow (*Spizella passerina*)

r. canescens Todd, used for this race in the A.O.U. checklist (1957), is preoccupied if the genera *Aimophila* and *Amphispiza* are combined.

TREE SPARROW

Spizella arborea (Wilson)

Casual visitor in fall and early winter. Five records, three from Point Loma (11–12 October 1970, McCaskie 1973; 30 October 1981; and 13–16 October 1981, R. E. Webster, photographed), one from Balboa Park (13–21 December 1975, AB 30:770, 1976), and one from Presidio Park (13 November 1976, AB 31:225, 1977).

Subspecies: No specimens have been collected in San Diego County, but all specimens from elsewhere in California have been *S. a. ochracea* Brewster (McCaskie 1973).

CHIPPING SPARROW

Spizella passerina (Bechstein) subsp.

Common spring and fall migrant, common but localized winter visitor, fairly common but localized summer resident. Breeding Chipping Sparrows occur in open woodland or woodland edges, most numerous in coniferous, less numerous in live oak, and rarely in riparian habitats. The species also breeds in orchards and parks in some places, but occupies only a small proportion of any of these habitats. Nesting localities are scattered through all zones of the coastal slope. Three especially favorable areas are Point

Loma (20 on 1 June 1977; nest on 20 May 1979), Cuyamaca Peak (six on 8 July 1978), and Mount Laguna (10 on 24 July 1976, P. Unitt). Chipping Sparrows leave the mountain zone in winter, but the timing of their movements in this area is poorly known; they are present at least from 29 March (1975, 10 at Paso Picacho Campground, G. McCaskie) to 17 October (1978, 15 at Cuyamaca Lake, P. Unitt). Egg dates (8): 29 April – 21 June.

Fall migrants arrive at non-breeding localities in late August or early September, rarely as early as 18 August (1968, San Diego area, G. McCaskie). During this season they visit open agricultural and disturbed, weedy areas, and also occur more widely in the habitats listed above. Flocks of fall migrants may contain as many as 40 birds (Tijuana River Valley, 15 October 1977; Point Loma 24 October 1978, P. Unitt).

By mid-November, most Chipping Sparrows have continued farther south, but some remain through the winter in the coastal lowland, desert-edge zone, and Anza-Borrego Desert, mostly in parks, occasionally in agricultural and desert wash scrub (20 at Buddy Todd Park in Oceanside on 3 January 1976, R. Higson; 40 in Balboa Park on 20 December 1975, J. Dunn). The species has also been noted in winter once in the foothill zone: 10 at Lake Henshaw on 3 February 1974 (J. Dunn). Wintering birds remain at non-breeding localities to mid-April; 12 at Old Mission Dam on 23 April 1977 (P. Unitt) were probably late migrants.

Chipping Sparrows apparently do not migrate through the coastal slope in large numbers in spring, but in the desert and desert edge zones, they are common at this season, with up to 30 in the Borrego Valley on 1 April 1978. Spring migrants have been noted on the eastern slope as late as 23 April (1929, two at Borrego, SD 12368-9).

Subspecies: *S. p. arizonae* Coues is probably the most numerous race of Chipping Sparrow in San Diego County, since five of the seven local adult specimens in SD are of this form. *Arizonae* breeds from Washington south to northern Baja California, and east through Arizona to central Texas and northwestern Chihuahua. One specimen collected near Jacumba on 30 November 1980 (SD 41267) and another from Imperial Beach on 18 September 1968 (SD 36801) have been identified as probably the darker-backed race *S. p. boreophilae* Oberholser by K. C. Parkes. He identified a specimen collected at San Luis Rey on 25 January 1963 (AMR 294) as a *boreophila/arizonae* intergrade. *Boreophila* breeds from Alaska and Manitoba south to British Columbia, Utah, and Nebraska. All these specimens should be re-examined with the possible validity of the supposedly darker Pacific coast race *S. p. stridula* Grinnell in mind (type locality, Pasadena, Los Angeles County). As the type of *stridula* was collected on 28 March, it could have been a migrant *boreophila*.

CLAY-COLORED SPARROW

Spizella pallida (Swainson)

Rare fall migrant, casual in winter and spring. Clay-colored Sparrows usually are seen singly with flocks of Chipping Sparrows. Nearly all reports are from the Point Loma, Tijuana River Valley, and Otay Mesa areas, but Clay-colored Sparrows could occur wherever fall migrant Chipping Sparrows congregate. An average of four to five Clay-colored Sparrows is noted annually, and the species has been reported every fall except one since 1963. The maximum for a single year is 19 in 1979; the maximum for a single day is five in the Tijuana River Valley on 12 November 1979 (G. McCaskie). The principal season of occurrence is from mid-September to mid-November; 28 August (1968, one in the Tijuana River Valley, AFN 23:112, 1969) is the early extreme. Clay-colored Sparrows have been seen four times later in the winter: one each in the Tijuana River Valley, 11-26 December 1966 (AFN 21:460, 1967), at Point Loma, 15-16 December 1974 (AB 29:744, 1975), at Otay Mesa, 25 November 1979-22 March 1980 (AB 34:663 and 817, 1980), and in the Otay River Valley on 19 December 1981 (G. McCaskie). Another in the Tijuana River Valley on 8 April 1970 (AFN 24:646, 1970) might also have wintered locally. One at Point Loma on 19 May 1980 (AB 34:817, 1980) was certainly a spring vagrant. The two specimens for the county were collected in the Tijuana River Valley on 25 September 1963 (SD 30690) and 8 October 1966 (SD 36050).

BREWER'S SPARROW

Spizella breweri Cassin subsp.

Common winter visitor in the Anza-Borrego Desert, elsewhere an uncommon migrant and rare winter visitor. Brewer's Sparrows visit creosote bush and desert wash scrub, where they often gather in flocks and sing communally. The largest numbers have been noted in the Borrego Valley: 50 on 6 April 1968 (G. McCaskie), 30 on 30 March 1975 (J. Dunn). The species is common in the Anza-Borrego Desert from at least early November through early April. The time of fall arrival in this area is unknown because the desert has been studied so little in fall; 5 November (1978, 15 at Yaqi Well, P. Unitt) is the earliest recorded date, but this is undoubtedly not representative. The late date for the Anza-Borrego in spring is 28 April (1973, one at Arroyo Salada, A. Morley).

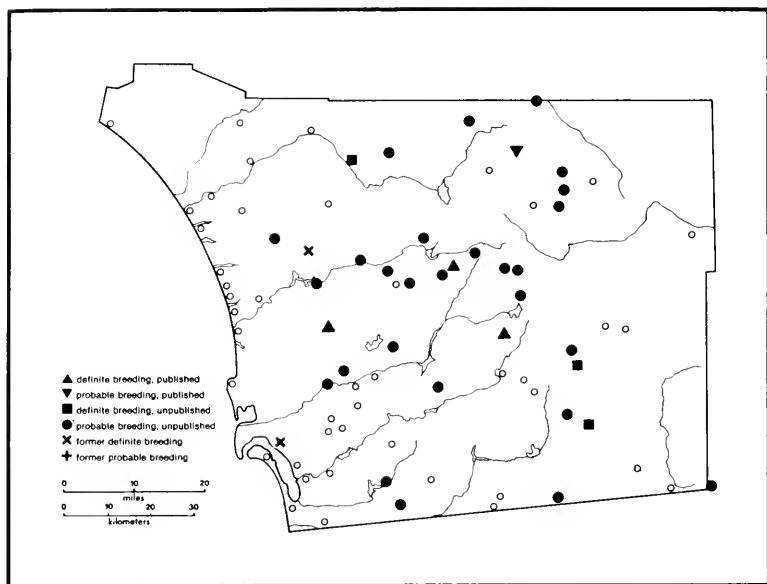
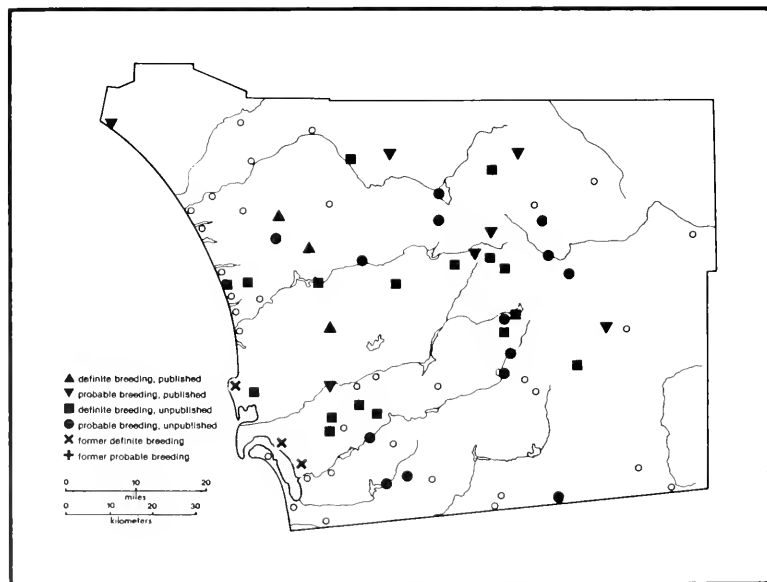
In the coastal lowland, the Brewer's Sparrow is an uncommon fall migrant, rare winter visitor and spring migrant. In fall, it is usually seen singly with flocks of Chipping Sparrows; numbers as high as 10 in the Tijuana River Valley on 19 September 1971 and five at Point Loma on 7 October 1974 (J. Dunn) are exceptional. It is noted most frequently from mid-September to mid-October, with 7 September (1976, one at Point Loma, G. McCaskie) being the earliest date. Winter occurrences in the coastal lowland involve at most two or three individuals; the report of 40 on a San Diego Christmas count, 3 January 1960 (AFN 14:271 1960) is undoubtedly mistaken. A few spring migrants occur in open areas with scattered brush or weeds from mid-March to early May (earliest, two collected from flock of about 12 in Paradise Valley on 15 March 1923, SD 8543-4; latest, one at Coronado Cays on 9 May 1978). The Brewer's Sparrow has been noted only twice in the foothill and mountain zones, both times in spring: one singing at Campo, 21-24 April 1977 (P. Unitt), and one collected at 1830 m (6000 feet) elevation in the Cuyamaca Mountains on the remarkably late date of 21 May 1893 (SD 1012). Stephens (1919a) stated that a few breed "along the east slope of the mountains," but never supported this statement with specimens or published details.

Subspecies: *S. b. breweri* Cassin, which breeds from southern British Columbia south through the remainder of the species' range, is the predominant race in San Diego County. *S. b. tawmieri* Swarth and Brooks, the Timberline Sparrow, breeds in the high mountains of southwestern Yukon, British Columbia, and western Alberta, and is distinguished from nominate *breweri* by its darker gray breast and broader black streaks on the back. *Tawmieri* has been collected in the county once, at San Luis Rey on 14 February 1962 (Rea 1967).

BLACK-CHINNED SPARROW

Spizella atrogularis cana Coues

Common summer resident, casual winter visitor. The Black-chinned Sparrow is a characteristic bird of chaparral in the

MAP 113. Breeding Distribution of Black-chinned Sparrow (*Spizella atrogularis*)MAP 114. Breeding Distribution of Lark Sparrow (*Chondestes grammacus*)

foothill zone, occurring in numbers as large as 50 in Banner Canyon on 22 April 1967 (G. McCaskie) and 30 in the Kitchen Creek Road/La Posta Truck Trail areas on 4 June 1977 (M. Evans). They also occur uncommonly to fairly commonly in chaparral in the mountain zone (three near Mount Laguna on 24 April 1977, one at Cuyamaca Peak on 8 July 1978 and 1 July 1979, P. Unitt). In the coastal lowland, Black-chinned Sparrows are uncommon and localized, but breed in coastal sage scrub as well as chaparral (three near Old Mission Dam on 7 April 1968, G. McCaskie; four along Jamul Creek near Lower Otay Lake on 21 April 1978, P. Unitt). Egg dates (3): 3–26 May; Willett (1933) reported eggs collected in the Cuyamaca Mountains on 23 April 1900; Sharp (1907), a set at Escondido on 12 June 1905.

Black-chinned Sparrows arrive in late March or early April, with the earliest recorded date being 23 March (1978 and 1979, Borrego Valley and San Diego, AB 32:1053, 1979, and AB 33:804, 1980). There is almost no information concerning when the birds depart in fall; at Old Mission Dam they have been noted as late as mid-September. Migrants are reported very rarely away from breeding localities in both spring and fall. Dates for such migrants extend from 23 March (cited above) to 21 May (1979, one at Point Loma, C. Edwards) and from 23 August (1970, one at Point Loma, AB 25:112, 1971) to 19 September (1971, one in the Tijuana River Valley, J. Dunn; 1974, two at Point Loma, G. McCaskie). An exceptionally late bird was at Point Loma 6–28 November 1965 (AFN 20:93, 1966). Black-chinned Sparrows have been recorded three times in winter: one seen near Lincoln Acres (National City) on 21 December 1927 (Abbott 1928a), one collected 3 km (2 miles) west of Bonita on 26 December 1940 (Huey 1954, SD 18245), and two seen in the Otay River Valley on 18 December 1971 (AB 26:523, 1972).

LARK SPARROW

Chondestes grammacus strigatus Swainson

Fairly common summer resident; common but localized winter visitor. Breeding Lark Sparrows need a combination of open grassy areas, some shrubbery, and a few trees. Edges or patches of coniferous, oak, or riparian woodland all meet these requirements; the birds may also nest in orchards. The species is most widespread in the foothill zone. It is more localized in the coastal lowland, but still breeds at many places in this region, particularly in the inland valleys. On the east slope, Lark Sparrows probably breed in San Felipe Valley (10 on 2 February 1978) and Earthquake Valley (15 on 5 April 1978, P. Unitt), and Grinnell and Miller (1944) reported Vallecito as a station of summer residence. They may nest in the Borrego Valley (20 on 1 April 1978, P. Unitt; 10 on 10 April 1976, G. McCaskie), since they have colonized some agricultural areas elsewhere in southeastern California. Egg dates (44):

27 March – 28 June; Sharp (1907) reported 6 July.

In winter, Lark Sparrows are more widespread in the coastal lowland, visiting some parks and agricultural areas where they do not breed. The species is gregarious at this season, and tends to wander, so it may be irregularly common in some places, but absent in many areas of suitable habitat. Some large winter concentrations are 100 in the Tijuana River Valley on 20 December 1975 (C. Lyons), 148 in Twin Oaks Valley on 3 January 1976 (W. Lenarz), 50 at Lake Henshaw on 5 November 1978 (P. Unitt) and “large flocks” at Volcan Mountain on 24 February 1884 (W. O. Emerson in Belding 1890).

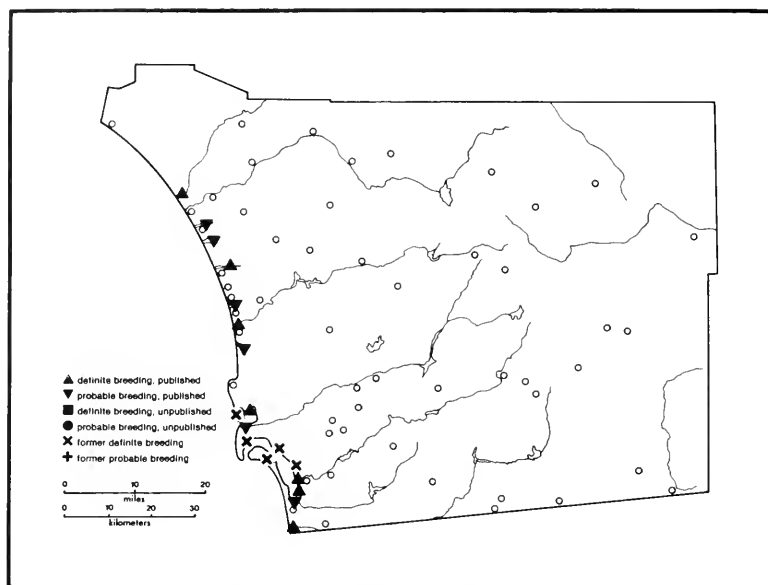
Very little is known of the timing of Lark Sparrow migrations. Migrants may appear in numbers in non-breeding habitat in mid-September. One in the Tijuana River Valley on 9 September 1977 (J. Dunn), and possibly one at Jacumba on 22 August 1922 (SD 34270; breeding status at this locality not known) were early migrants.

VESPER SPARROW

Pooecetes gramineus (Gmelin) subsp.

Uncommon to rare migrant and winter visitor. Vesper Sparrows occur in open grassland, agricultural fields, and creosote bush scrub. They are normally seen singly or in twos; 10 in the Tijuana River Valley on 3 February 1968 (G. McCaskie) is exceptional. Most records are from the coastal lowland, but the species is probably just as frequent in the poorly known foothill zone (two at Lake Henshaw on 13 and 26 November 1977, P. Unitt; one at Mesa Grande on 7 December 1976, A. Fries). There is very little information on Vesper Sparrows in the Anza-Borrego Desert (one on 9 March 1974, J. Dunn), but since they are locally common in Imperial County, they might be more numerous in the desert than on the coastal slope. Recorded dates of occurrence extend from 25 September (1971, one in the Tijuana River Valley) and 28 September (1975, one at the same locality, J. Dunn) to 16 March (1974, one at Old Mission Dam, G. McCaskie) and 18 March (1923, 1.6 km [1 mile] east of Bernardo, SD 8562). The Vesper Sparrow is less common now than formerly; early writers such as Belding, Emerson, and Stephens described it as “tolerably common” or “rather common,” terms that certainly do not apply today.

Subspecies: Two distinct races of Vesper Sparrows visit San Diego County. The pale, gray *P. g. confinis* Baird is much the more frequent; it breeds in the Great Basin, Rocky Mountain, and Great Plains regions. The smaller, buffy brown *P. g. affinis* Miller breeds in western Washington and Oregon. Belding (1890) reported collecting one *affinis* from a flock of *confinis* at El Cajon in the winter of 1883–1884. Of the 17 Vesper Sparrows from San Diego County in SD, only two are well-marked *affinis*, collected at Jamacha on 23 February and 1 March 1924 (SD 9266 and 9270).



MAP 115. Breeding Distribution of Savannah Sparrow (*Ammodramus sandwichensis*)

SAVANNAH SPARROW

Ammodramus sandwichensis (Gmelin) subsp.

Common but localized resident; abundant migrant and winter visitor. Three distinct subspecies groups of Savannah Sparrows occur in San Diego County. Each group was once considered a distinct species, and the status of each is so different that it is useful to discuss them separately.

The Belding's Sparrow, *A. s. beldingi* (Ridgway), is a permanent resident of San Diego County. Most of our knowledge of this race, which ranges along the coast from Goleta in Santa Barbara County south to El Rosario in Baja California, is based on the study by Massey (1977). Belding's Sparrows nest in salt marshes or around lagoons in low vegetation dominated by pickleweed (*Salicornia virginica*). They prefer the upper littoral zone of tidal marshes, that is, areas flooded only by high spring or storm tides. On the Federal Aviation Administration Island (= Beacon Island) in Mission Bay, where there is no *Salicornia*, they nest in low weeds growing on the sand of this completely artificial piece of land. The birds forage in their nesting marshes, and also on nearby mudflats, beaches, rocks, and in low coastal strand vegetation. In 1977 Massey estimated a total San Diego County population of 651 pairs at 16 sites (see table), out of a total California population of 1610 pairs at 28 sites. Formerly, Belding's Sparrows nested at many more sites around Mission and San Diego bays; harbor development has greatly reduced the amount of habitat usable by this species. The California Fish and Game Com-

mission has declared it an endangered species. Egg dates (221): 15 March – 2 July; mostly in April and May.

Other subspecies of *Ammodramus sandwichensis* breeding north of the Mexican border show much variability, but all are paler brown or gray than *beldingi*. These birds reach San Diego County as abundant migrants and winter visitors to grassland, agricultural fields, and disturbed weedy areas. They also mix with Belding's Sparrows in coastal marshes and low strand vegetation. Migrant Savannah Sparrows seem most abundant in the coastal lowland (350 at San Marcos on 31 December 1977, D. Herron; 2000 in the Tijuana River Valley on 20 December 1975, C. Lyons), but may be common to very common in grassland in the foothill zone as well (Lake Henshaw, 75 on 13 November 1977, and 25 on 2 February 1978, P. Unitt; Santa Ysabel, "large flocks" in March 1884, W. O. Emerson in Belding 1890). There is almost no information from the mountain zone; Emerson collected specimens at Volcan Mountain on 9 and 11 March 1884 (in Belding 1890). Savannah Sparrows probably occur fairly commonly but locally in the Anza-Borrego Desert (five at Vallecito on 18 March 1978; 10 in the Borrego Valley on 5 April 1978, P. Unitt); more information is needed for this area, too. Migrant forms occur commonly from late August through mid-April, with extreme dates 14 August (1978, two in the Tijuana River Valley, P. Unitt) and 1 May (1921, 5 km [3 miles] west of Santee, SD 34170).

At least three races of Savannah Sparrows migrate into

Numbers of pairs of Belding's Savannah Sparrows
at colonies in San Diego County in 1977.

Santa Margarita River Mouth	106
Buena Vista Lagoon	5
Agua Hedionda Lagoon	16
Batiquitos Lagoon	20
San Elijo Lagoon	30
San Dieguito River mouth	9
Los Peñasquitos Lagoon	52
Kendall-Frost Marsh Reserve, Mission Bay	45
Federal Aviation Administration Island, Mission Bay	4
San Diego River mouth	70
Paradise Marsh, National City	16
Sweetwater River mouth	40
E Street Marsh, Chula Vista	18
Salt Works, south San Diego Bay	100
Marine Biology Study area (southwest San Diego Bay)	25
Tijuana River mouth	95

TOTAL 651

San Diego County from farther north. The most abundant is *A. s. anthinus* (Bonaparte), which breeds in Alaska and northwestern Canada (a thicker-billed race, *A. s. crassus* (Peters and Griscom), from southeastern Alaska, is sometimes distinguished from *anthinus*, and might reach San Diego). Smaller numbers of *A. s. brooksi* (Bishop) (breeding in the Pacific Northwest from British Columbia to Del Norte County; smaller than *anthinus*) and *A. s. nevadensis* (Grinnell) (breeding in Great Basin and Rocky Mountain regions; grayer than *anthinus*) also reach here in winter.

A third group of subspecies is represented by *A. s. rostratus* (Cassin), the Large-billed Sparrow. This form breeds in marshes around the head of the Gulf of California, particularly in the delta of the Colorado River. With its large size, scarcely streaked back, and thick bill, it looks almost as much like a female House Finch as a Savannah Sparrow. Formerly, Large-billed Sparrows were common fall and winter visitors to marshes, beaches, wharves, and even city streets along the coast of San Diego County. Anthony (1906) reported birds carrying food and feeding juvenals at San Diego and Oceanside, but local breeding was never actually documented. Turn-of-the-century egg collectors took a special interest in this bird because its breeding range was still unknown at that time. Specimen dates extend from 8 August (1914, National City, SD 34210) to 23 February (1930, Silver Strand, SD 34215). Anthony (1906) reported that they "swarm until March 5 or later" on the tide flats about San Diego Bay, and Willett (1933) reported a specimen from Orange County on 8 March. For some reason not definitely known, but probably related to the

radical habitat changes in the Colorado Delta, Large-billed Sparrows have virtually ceased to occur on the coast of California. The most recent specimen was collected at the Sweetwater River mouth on 2 February 1944 (SD 18797); significant numbers were last reported on 26 December 1954 (12 on the San Diego Christmas Bird Count, AFN 9:228, 1955). The only more recent record is of an individual carefully studied by J. Dunn at Border Field on 11 November 1977 (AB 32:264, 1978).

BAIRD'S SPARROW

Ammodramus bairdii (Audubon)

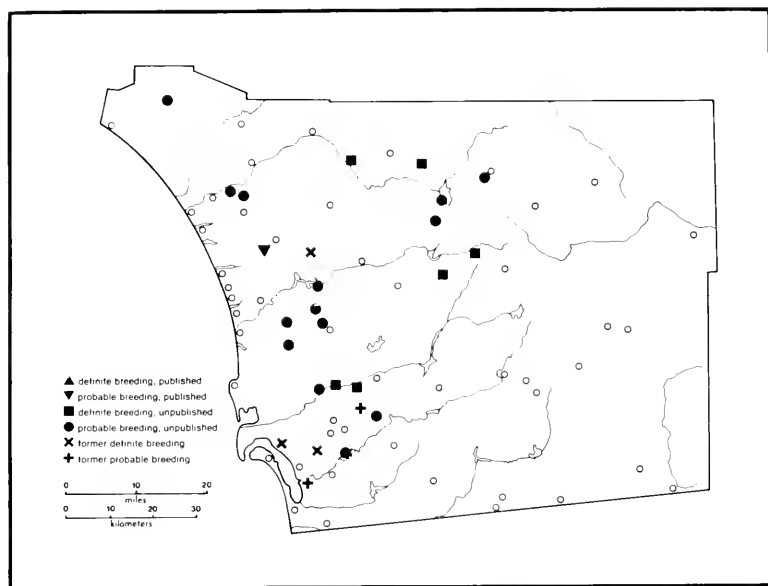
Accidental, one record. One at Point Loma 5–10 October 1981 was photographed at very close range (G. McCaskie and many other observers).

GRASSHOPPER SPARROW

Ammodramus savannarum perpallidus (Coues)

Uncommon and localized summer resident, very rare (?) in winter. Grasshopper Sparrows occur in areas of tall grass, often where mixed with a few shrubs typical of coastal sage scrub such as flat-top buckwheat. Localities for the species are scattered mostly through the inland valleys of the coastal lowland, but it has also been noted at Lake Henshaw (one on 27 January 1978, C. Edwards; one on 29 July 1978, G. McCaskie) and 2.4 km (1.5 miles) southwest of Warner Springs (one on 15 January 1981, H. Wier) in the foothill zone, and at Dyche Valley near Palomar Mountain (five adults and three juvenals on 4 August 1981, C. Edwards) in the mountain zone. Some favorable localities are near the east end of Lake Hodges (five on 3 July 1981, K. Weaver), in Los Peñasquitos Canyon near Black Canyon Road (five on 23 March 1977), and the north side of San Diego River near Old Mission Dam (up to 19 on 3 June 1978, C. Edwards.). Egg dates (5): 26 April – 8 May. Huey (1915b) noted nests near San Diego on 17 May 1907 and 19 May 1912; Dixon (1916) collected eggs at Escondido on 13 April 1915. The extent of suitable Grasshopper Sparrow habitat in San Diego County is diminishing rapidly with urban development of the coastal lowland.

The seasonal status of Grasshopper Sparrows is still obscure. The birds are conspicuous from late March through mid-July, when they sing from the tops of bushes or tall grass stems. When not singing, they are very secretive, hiding in dense grass, and providing an observer such brief views when they flush that they are difficult to distinguish from the abundant Savannah Sparrow. The local population may be resident or partly migratory. Two migrants have been reported away from nesting habitat: one at Agua Hedionda Lagoon on 10 November 1979 (C. Edwards), the other at Otay Mesa on 15 October 1980 (G. McCaskie). Other than those already mentioned, the only reports of Grasshopper Sparrows from September through February are of one near Escondido on 1 November 1958 (AFN 13:325, 1959), two at Sweetwater Reservoir on 6



MAP 116. Breeding Distribution of Grasshopper Sparrow (*Ammodramus savannarum*)

February 1977 (AB 31:375, 1977), and one at the same locality on 15 December 1979 (D. Parker).

SHARP-TAILED SPARROW

Ammodramus caudacutus nelsoni Allen

Casual winter visitor. One was collected in the Tijuana River estuary on 2 November 1963 (McCaskie et al. 1967c, SD 30788), and up to three were present at the same locality 22 November 1980–7 January 1981 (AB 35:228 and 337, 1981; photographed). On the latter occasion, the birds kept to a small patch of tall *Spartina* grass within the marsh. Continued search of such situations might reveal the species to occur more regularly, as it does at Newport Bay in Orange County. The report of one at San Luis Rey in the winters of 1961–62 and 1962–63 (A. M. Rea in McCaskie and Banks 1966) is disregarded here since there was no further documentation, and the bird was in atypical habitat (agricultural fields). Sharp-tailed Sparrows adhere closely to tidal salt marshes during their winter stays in California.

FOX SPARROW

Zonotrichia iliaca (Merrem) subspp.

Fairly common winter visitor, uncommon summer resident on Cuyamaca Peak. Wintering Fox Sparrows frequent mainly dense chaparral, where they scratch through the leaf litter on the ground. They may also be found in park shrubbery and the undergrowth of woodland edges, situations which meet their needs for dense, low vegetative cover,

shaded ground, and abundant leaf litter. Fox Sparrows occur throughout San Diego County, but are probably most numerous in the foothill zone. They are usually uncommon along the coast, and are rare in desert wash scrub in the Anza-Borrego Desert. Their abundance varies appreciably from year to year, as indicated by the totals in San Diego Christmas Bird Counts: 36 on 18 December 1976, 12 on 17 December 1977, only one on 16 December 1978. Fox Sparrows arrive in San Diego County in late September or early October, and depart mostly by early to mid-April. The earliest recorded arrival dates are 17 September (1977, one at Palomar Mountain, E. Copper—possibly a summer resident?) and 22 September (1969, three at Point Loma, AFN 24:100c, 1970); late dates are 1 May (1948, one at Pauma Valley, E. Beemer) and 12 May (1976, one at Point Loma, J. Dunn).

Summering Fox Sparrows were discovered on Cuyamaca Peak in 1978 by David Povey. There the birds inhabit dense low scrub mixed with young conifers above 1680 m (5500 feet) elevation. Up to eight individuals were noted in the area between 21 June and 6 August 1978 (AB 32:1210, 1978). The species has been found on Cuyamaca Peak each succeeding summer, with a maximum of 16 individuals on 17 June 1980 (AB 34:931, 1980). The birds sing, are territorial, and presumably are breeding, but nests or young have not yet been found. R. Higson located three or four pairs around the Palomar Observatory in the summer of

1979 (AB 33:898, 1979), but the birds did not return the following year. These records represent a southward extension of the summer range of Fox Sparrow; it had previously been reported south only to the San Jacinto Mountains. As the chaparral habitat on Cuyamaca Peak represents a seral stage in the recovery of the original coniferous forest after a fire, it is quite possible that the Fox Sparrows were absent before the area burned, and will disappear when the climax forest reestablishes itself.

Subspecies: Fox Sparrows show great geographic variability, which merits detailed attention here since at least seven subspecies from all over western North America migrate to San Diego County. The most strongly differentiated races are easy to identify, but connecting forms and intergrades complicate the situation. I believe the multiplicity (18) of subspecific names is unnecessarily confusing; more intermediate forms have been named than I find useful. Another complication is "foxing": the tendency for older museum specimens to turn from grayish to reddish. Newly collected birds will not look like specimens of the same race taken 30 or 40 years earlier. The change is enough to obliterate the differences between some subspecies. Some *Z. i. unalaschensis* (a drab brown race) that Frank Stephens collected in the 1880s have become bright rufous.

Swarth's (1920) review of the species is still the most comprehensive. Swarth divided the Fox Sparrow into three major groups of races. The *iliaca* group comprises *Z. i. iliaca* (Merrem), breeding mainly in Ontario, Quebec, and Newfoundland, *Z. i. zaboria* (Oberholser), breeding from northwestern Alaska east through the boreal forest of Canada to Manitoba, and *Z. i. altivagans* (Riley), breeding in interior British Columbia and western Alberta. Rufescent coloration, short tail, and small to moderate size bill characterize the group as a whole. N nominate *iliaca* is the brightest rufous form of Fox Sparrow, but it has "not yet [been] taken as far west even as Minnesota" (Phillips et al. 1964). *Zaboria* is easily distinguished, even in the field, from other western races by its contrasting gray and rufous striped back and mostly rufous breast spots. It is casual in San Diego County. The only extant specimen of *zaboria* from this area was collected at Point Loma on 18 November 1968 (SBCM 4423). It shows some intermediacy toward *altivagans* in having brown spots on the lower breast and flanks. Bryant (1889) reported an "*iliaca*" from Poway on 3 January 1888, but as neither *zaboria* nor *altivagans* had then been described, and the specimen was lost in the San Francisco fire of 1906, its subspecific identity remains inconclusive. There are also two sight records of *zaboria* in San Diego County: 25 February 1973, Agua Caliente Springs; and 8 March 1974, Tijuana River Valley (G. McCaskie).

Both Swarth (1920) and Phillips et al. (1964) placed *altivagans* with the *iliaca* group, but *altivagans* occupies the central position between the three groups, and inter-

grades with all three. My understanding of *altivagans* has been hampered by SD's lack of specimens from the breeding range; I have had only published descriptions and old, foxed specimens identified by Swarth to guide me. *Altivagans* usually shows obscure streaking on the back, and the spots on the underparts often have a rufous tint. Some birds lack the back streaking completely, and thus resemble the *unalaschensis* group breeding on the Pacific coast, but have more rufescent backs, and especially, lighter, brighter rumps than any of that group. There are also some birds darker than typical *altivagans*, darker, more rufous, and with heavier breast spotting than *unalaschensis*, that may be intergrades between *altivagans* and *townsendi* or *fuliginosa*.

Z. i. altivagans is probably uncommon in San Diego County. Swarth (1920) reported two collected by W. O. Emerson in the Volcan Mountains on 6 February and 29 March 1884. I judge four specimens of the 79 from the county in SD to be more or less typical *altivagans*: San Diego (=Mission) Gorge, 17 December 1924 (SD 2891); Flynn Springs, 6 February 1921 (SD 34628); Point Loma, 14 November 1969 (SD 37593); and same locality, 23 November 1947 (SD 19262). Another four are the darker birds that may be intergrades between *altivagans* and *townsendi* or *fuliginosa*: Old Mission Dam, 3 January 1921 (SD 34629); 2 miles east of Descanso, 16 November 1924 (SD 34697); and 4 miles north of San Marcos, 24 and 25 December 1930 (SD 14460 and 14461).

Along the Pacific coast from the Aleutian Islands south to the Olympic Peninsula nests the second group of Fox Sparrow subspecies, the *unalaschensis* group. These forms have plain brown upperparts, dark chestnut rumps, and tails shorter than wings. Variation within the group consists of a trend from medium brown, medium-billed birds in the north to dark sooty brown, small-billed birds in the south. The six subspecies described within the *unalaschensis* group represent steps along this cline. The six are: *Z. i. unalaschensis* (Gmelin), eastern Aleutians and Alaska Peninsula; *Z. i. ridgwayi* Paynter (= *Passercella i. insularis* Ridgway), Kodiak Island; *Z. i. sinuosa* (Grinnell), south-central Alaska; *Z. i. amnecens* (Ridgway), Yakutat Bay region; *Z. i. townsendi* (Audubon), southeastern Alaska; and *Z. i. fuliginosa* (Ridgway), coastal British Columbia and Olympic Peninsula. I have seen freshly molted or molting immatures collected in August 1977 and 1979 of *unalaschensis* (two from Bearof Lake), *amnecens* (two from Yakutat), and *townsendi* (eight from Haines south to Revillagigedo Island).

In San Diego County, *unalaschensis*-group Fox Sparrows range from uncommon along the coast to possibly common in the mountains. All of this group I have seen from San Diego County are of the paler, northern type (*unalaschensis*, *ridgwayi*, or *sinuosa*). Having seen specimens from only one locality in their breeding ranges, I am unable to distinguish among the three. I suspect that foxing obscures

their slight differences, if indeed the subspecies are valid. Willett (1933) wrote that a union of *unalaschensis* (the oldest name), "*insularis*," and *sinuosa* "would greatly simplify the classification of the group." SD has ten county specimens of *unalaschensis* (in a broad sense, including *ridgwayi* and *sinuosa*) collected between 19 October (1979, Mission Gorge, SD 40971 and 40972) and 23 March (1919, Dehesa, SD 34681). W. O. Emerson (in Belding 1890) reported *unalaschensis* as "very common" on Volcan Mountain until 11 February 1884 when apparently driven out by snow. Swarth (1920) examined two "*insularis*" collected there on 31 January and 12 February 1884. Bishop (1905) reported that H. C. Oberholser identified three of 13 Fox Sparrows taken at Witch Creek on 21 December 1904 as *annectens*.

The third group of Fox Sparrow races, the *schistacea* group, nests in the mountains of the western United States. Birds of this group have tails longer than wings and plain gray heads and backs. The principal variation within the group is in bill size, from small to grotesquely large.

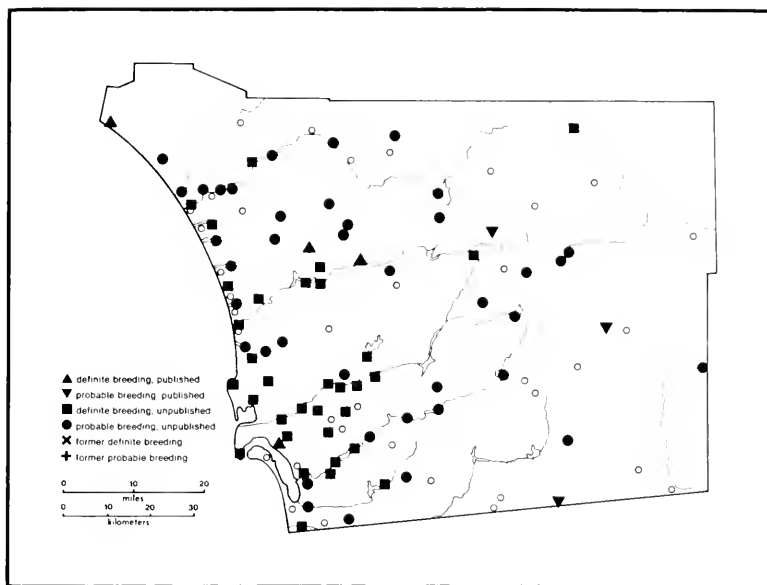
The race *Z. i. olivacea* (Aldrich) breeds primarily in the Cascade Range of Washington. It is a brownish-gray backed, small-billed form, and is intermediate between the more rufescent *altivagans* to the north and the paler, grayer *schistacea* to the south and east. I have identified no typical *olivacea* from San Diego County, but two specimens I believe to be intergrades between *olivacea* and *altivagans*: Point Loma, 16 December 1970 (SD 37751) and Highland Valley near Ramona, 9 October 1950 (SD 29877). I have had very few fresh-plumaged *olivacea* for comparison, however.

The gray-backed Fox Sparrows breeding in the Great Basin and Rocky Mountains are the small billed race *Z. i. schistacea* (Baird). Two other names have been proposed for small-billed gray birds, *Z. i. canescens* (Swarth) and *Z. i. swarthi* (Behle and Selander), but Phillips et al. (1964) found these to be invalid, based on unfoxed, worn breeding specimens compared with older, foxed material. *Z. i. schistacea* is probably an uncommon visitor, at least to the coastal lowland of San Diego County. SD has six specimens, from 14 December (1967, Borrego Palm Canyon, SD 36463) to 6 March (1931, 4 miles north of San Marcos, SD 14462). One of these (Escondido, 19 January 1935, SD 29265) is darker, suggesting intergradation with *olivacea*. The Borrego Palm Canyon specimen is the only SD Fox Sparrow from the east side of the mountains. Bishop (1905) recorded eight of his thirteen December Witch Creek specimens as *schistacea*; Swarth (1920) reported one collected at Dehesa on 19 February 1917.

The Fox Sparrows breeding in the Sierra Nevada, southern Cascades, and Warner Mountains have thick bills; they were once called "Thick-billed Sparrows." Swarth (1920) used four names for birds from this area. He applied *Z. i. fulva* (Swarth) to Fox Sparrows breeding in the Warner Mountains of northeastern California and in other

mountains east of the Cascade Range in south-central Oregon. He characterized *fulva* as being slightly browner than the other thick-billed races, and having a smaller, slenderer bill (depth 10.5–11.5 mm), though not nearly as small as in *schistacea* (depth 8.8–10.2 mm). He called the thick-billed (depth 11.0–13.5) birds breeding in the southern Cascades and Sierra Nevada *Z. i. mariposae* (Swarth). On the east side of the Sierra around Mono Lake he distinguished *Z. i. monoensis* (Grinnell and Storer) by bill averaging smaller (depth 10.5–12.2 mm) than in *mariposae*, but heavier and stubbier than in *fulva*. *Monoensis* he also supposed to be grayer-backed than *fulva*. Swarth applied *Z. i. megarhynchus* (Baird) to many brownish-backed, thick- and stubby-billed birds wintering in southern California. He was unable to identify a breeding range for *megarhynchus*, but predicted that it should lie in northwestern California. After acquiring specimens from that area that did not match *megarhynchus*, Grinnell and Miller (1944) concluded that Swarth's concept of *megarhynchus* was an artificial assemblage of birds drawn mainly from a breeding range in the southern Cascades, but not satisfactorily distinguishable from *mariposae* of the central Sierra Nevada. Thus *mariposae* fell as a synonym to the older name *megarhynchus*. I have not seen specimens from the breeding range of *monoensis*, but Swarth's table of measurements indicates much bill size overlap among *monoensis*, *megarhynchus*, and "*mariposae*." Of the 48 *megarhynchus/monoensis/fulva* from San Diego County in SD, 36 lie in the 11.0–12.2 mm bill depth overlap zone. With so many equivocal specimens, I conclude that separation of *monoensis* as a distinct subspecies is impractical. Willett (1933) wrote "a careful examination of a large series of specimens has failed to convince the writer that the proposed race *mariposae* shows sufficient characters to warrant its separation from *monoensis*."

Z. i. fulva presents a more difficult problem. It is unquestionably smaller billed than *megarhynchus*. I measured five breeding males each from the ranges of *fulva* (two from the Warner Mountains and three from Hart Mountain, Oregon) and *megarhynchus* (one each from Siskiyou, Plumas, and Butte counties, and two from Placer County). The *fulva* specimens have bill depths 10.7–11.0 mm; the *megarhynchus*, 11.6–12.9 mm. But the range of bill depth in "*monoensis*" completely overlaps that in *fulva*. I can see no difference in back color between fresh-plumaged September *fulva* (supposedly browner) from Hart Mountain and October "*monoensis*" (supposedly grayer) identified by Swarth from northern Baja California. All were collected in the 1920s and 1930s, so all should be equally foxed. And I can not appreciate the difference in bill shape Swarth described either. Since it is difficult or impossible to identify specimens of them taken away from their breeding ranges, I suggest the simplest course would be to consider both *monoensis* and *fulva* synonyms of *megarhynchus*.

MAP 117. Breeding Distribution of Song Sparrow (*Zonotrichia melodia*)

So defined, *Z. i. megarhynchus* is the commonest subspecies of Fox Sparrow in San Diego County, with 48 out of the 79 SD specimens. *Megarhynchus*' dominance may be confined to the lowland and lower foothill zones, since of the 79 total specimens, nine are from along the coast, 54 are from inland sections of the lowland, 13 are from the foothill zone, one is from the desert, and none is from the mountains. Emerson (in Belding 1890) reported only two sightings of *megarhynchus* from the Volcan Mountains while *unalaschensis* was common there. Of Bishop's (1905) thirteen specimens from Witch Creek (in the upper foothill zone near Santa Ysabel), only one was typical *megarhynchus*. *Z. i. megarhynchus* specimen dates range from 7 October (1977, Point Loma, SD 40425) to 11 April (1946, Point Loma, SD 19211; 1949, 3 miles west of Jamul, SD 19286).

The Fox Sparrows, *Z. i. brevicauda* (Mailliard), nesting in the inner coast ranges of northwestern California have extremely thick bills (depth 13.5–15.5 mm) with grossly swollen bases. This race is apparently rare in San Diego County. Only three SD specimens are typical *brevicauda*: Old Mission Dam, 14 February 1924 (SD 9252, bill depth 13.5 mm); Monte Robles, 4 miles southwest of Ramona, 18 December 1930 (SD 14121, bill depth 14.2 mm); and 1 mile south of Flynn Springs, 22 February 1921 (SD 34768, bill depth 14.4 mm). Another two specimens, identified by Swarth as *brevicauda*, have bills larger than any

megarhynchus from the county, and are probably intergrades between the two: 3 miles south of Alpine, 8 February 1921 (SD 34753, bill depth 12.8 mm) and Flynn Springs, same date (SD 38377, bill depth 13.1 mm).

The final race of Fox Sparrow is *Z. i. stephensi* (Anthony). This species has a very thick bill (depth 14.0–16.0 mm) but which is not bulbous-based as in *brevicauda*. *Stephensi* breeds from the Sierra Nevada of Tulare County south through the high mountains of southern California. Thus the Fox Sparrows summering on Cuyamaca Peak are presumably *stephensi*, though none has yet been collected. None of SD's 79 county specimens is *stephensi*, the race breeding closest to San Diego County! Swarth (1920) identified three winter *stephensi* from Los Angeles County and another from Santa Barbara, but the species' main winter range remains unknown.

SONG SPARROW

Zonotrichia melodia (Wilson) subsp.

Very common resident. Song Sparrows need dense, low vegetation in a moderately to very humid environment. Riparian woodland, fresh-water marshes, and low vegetation fringing lagoons, lakes, and ponds all meet the species' requirements, and it is one of the most abundant birds in these habitats. It is fairly common in park shrubbery and damp, shady chaparral near the coast, and uncommon to rare in orchards, residential areas, and dry, weedy fields.

Song Sparrows are very widespread in San Diego County, inhabiting almost the entire coastal slope, and extending to some oases in the Anza-Borrego Desert: Lower Willows of Coyote Creek Canyon (three on 1 July 1978), Sentenac Canyon (two on 30 June 1978), and Carrizo Marsh (four on 6 May 1978, S. Goldwasser). They are most numerous in the coastal lowland (190 near Carlsbad on 22 December 1979, C. Edwards; 162 at San Elijo Lagoon on 5 May 1974, SEL surv.; 76 at Bonita on 20 December 1980, J. Oldenettel), but are uncommon and localized in the mountain zone (four near the Palomar Observatory on 10 June 1980; five at Cuyamaca Lake on 25 June 1978, P. Unitt). Egg dates (119): 16 February – 13 July, mostly in April and May. Sharp (1907) reported nests as late as 18 July.

Subspecies: Our apparently sedentary breeding race is *Z. m. cooperi* (Ridgway), which ranges through coastal central, southern, and Baja California from Santa Cruz south to latitude 30° N, and extends down the desert slopes of the mountains to their northern or eastern bases. In San Diego County, even the birds at Carrizo Marsh look like *cooperi*, rather than the very different (paler and more rufous) *Z. m. saltonis* (Grinnell), which inhabits the basin of the Salton Sea and Colorado River Valley. One specimen of a migrant race has been collected, a *Z. m. merrilli* (Brewster) at Yaqui Well (where *cooperi* is absent) on 13 October 1936 (SD 17255). *Merrilli* breeds in southeastern British Columbia, southwestern Alberta, eastern Washington, northern Idaho, and northwestern Montana. Huey (1954) misidentified this specimen as *Z. m. morphna* (Nuttall); A. M. Rea critically reidentified it. Other migrant subspecies should also reach San Diego County occasionally, especially *montana* and *fisherella*, both of which have been reported in Imperial County.

LINCOLN'S SPARROW

Zonotrichia lincolnii (Audubon) subspp.

Fairly common to common migrant and winter visitor. Lincoln's Sparrows occur in dense, low underbrush, favoring disturbed or edge situations where grasses or weeds are mixed with shrubs. They may be found throughout the county, most commonly in the coastal lowland (up to 30 near Bonsall on 28 December 1980, K. Campbell; 40 in Balboa Park on 20 December 1975, J. Dunn), uncommonly to fairly commonly in other areas (five at Paso Picacho Campground on 29 March 1975, G. McCaskie; six at Banner on 15 April 1978; five at Vallecito on 18 March 1978, P. Unitt). Fall migrants usually begin arriving in late September, sometimes in mid-September (earliest reported, one in the Tijuana River Valley on 13 September 1974, J. Dunn). In spring, the species departs in late April, with 25 April (1975, one in Sorrento Valley, J. Dunn) and 4 May (1970, one at Pauma Valley, E. Beemer) being the latest known dates.

Subspecies: Both races of Lincoln's Sparrow have been recorded in San Diego (*Z. l. alticola* (Miller and McCabe)

is a synonym of *lincolnii*, *vide* Phillips et al. 1964). Nominate *lincolnii* is much the more common of the two. *Z. l. gracilis* (Kittlitz), distinguished mainly by its smaller size, breeds in coastal southeastern Alaska and British Columbia. *Gracilis* probably reaches San Diego County as a rare visitor; Grinnell (1915) reported specimens in MVZ from Witch Creek, Jacumba, and Tijuana River Valley. Willett (1933) mentions two *gracilis* specimens in SD, but on present re-examination, they measure too large for that form. Measuring all the 18 San Diego County Lincoln's Sparrows in SD, I find however that three of them are small enough to qualify as *gracilis* (wing chords 58–59 mm): National City, 10 January 1924 (9216), Tijuana River Valley, 9 February 1928 (30463), and same locality, 25 October 1974 (38983). Phillips et al. (1964) wrote that *gracilis* is also "characterized by a pronounced buff overcast on the head and nape." Of the three county specimens that appear to be *gracilis* on the basis of short wings, two (9216 and 38983) have crowns and backs darker and browner than nominate *lincolnii*, though they are not particularly buffy. The third (30463) matches several *lincolnii* in color. Two other specimens have quite dark crowns and backs (San Diego, 20 February 1917, SD 34814; Point Loma, 29 September 1965, SD 35524), but have long wings (62.7 and 63.5 mm respectively). Willett (1933) had identified the one from San Diego as *gracilis*.

SWAMP SPARROW

Zonotrichia georgiana (Latham) subspp.?

Rare fall migrant and winter visitor. Swamp Sparrow is a good name for this species, which visits freshwater marshes and riparian woodland almost exclusively, even here on the fringe of its winter range. It has been noted at many localities in the coastal lowland, most often in the Tijuana River Valley, where the maximum of four was seen on 18 January 1964 (G. McCaskie), and one was collected on 12 February 1964 (McCaskie et al. 1967c, SD 35080). Some other localities are Guajome Lake (one on 22 December 1979, I. MacGregor), Lake Hodges (one from 3 to 10 March 1979, AB 33:317, 1979), Santee Lakes (one on 4 February 1978, AB 32:402, 1978), Sweetwater Reservoir (one on 4 November 1943, Huey 1944, SD 18759; one on 6 February 1977, AB 31:375, 1977) and Bonita (two from 11 January to 4 April 1964, McCaskie et al. 1967c). One at Presidio Park on 20 November 1974 (J. Dunn) and another at Point Loma on 2 November 1981 (P. Unitt) were migrants in atypical habitat. The only report east of the coastal lowland is of one at Lake Henshaw on 20 February 1979 (AB 33:317, 1979). An average of about three is reported in the county each winter, with a maximum of nine in 1963–1964 (AFN 18:389, 1964). Early November thorough late March is the principal season for Swamp Sparrows. Early reports are one near Lakeside on 13 October 1957 (AFN 12:60, 1958) and one in the Tijuana River Valley on 1 November 1969 (AFN 24:100c, 1970); late, one at Bonita and one at Otay Mesa (=near San Ysidro) on 4 April 1964

(AFN 18:488, 1964) and one at O'Neill Lake on 11 April 1975 (A. Fries).

Subspecies: The two specimens from San Diego County have not been determined to race; I have not seen critically identified material for comparison. The northern, paler form *Z. g. ericrypta* (Oberholser) is more likely, but Cardiff (1961) reported a nominate *georgiana* collected at Niland, Imperial County, on 1 February 1953.

HARRIS' SPARROW

Zonotrichia querula (Nuttall)

Very rare winter visitor. Harris' Sparrows have been noted eleven times in the county, usually with flocks of other migrant sparrows. All reports are of single individuals, except for one of two individuals in the Tijuana River Valley from 16 December 1972 to 20 January 1973 (G. McCaskie). Recorded dates extend from 22 November (1970, Tijuana River Valley, AB 25:112, 1971) to 10 May (1976, Coronado Cays, AB 30:893, 1976). Other records are for Encinitas (21 December 1927, Cozens 1928; 15 April 1955, AFN 9:404, 1955), Tijuana River Valley (2 January – 19 March 1966, AFN 20:461, 1966; 20–24 December 1969), Valley Center (17 December 1969, AFN 24:54, 1970), Point Loma (7 April 1972, AB 26:657, 1972; 14 December 1974 – 1 March 1975, AB 29:744, 1975), and Oceanside (27 April 1973, AB 27:822, 1973). The Harris' Sparrow has not yet been collected or photographed in San Diego County.

WHITE-CROWNED SPARROW

Zonotrichia leucophrys (Forster) subsp.

Abundant migrant and winter visitor. White-crowned Sparrows are very widespread in San Diego County wherever shrubbery or weeds lie near patches of short grass or bare ground. Agricultural and residential areas, broken chaparral, woodland edges, desert-edge and desert wash scrub are all favorable for large numbers of this species. It is most abundant in agricultural and disturbed, weedy areas in the coastal lowland (540 near Carlsbad on 1 January 1977, C. Edwards; 3000 in the Tijuana River Valley on 20 December 1975, C. Lyons). White-crowned Sparrows are quite regular in their migratory habits, arriving each fall between 16 September (1973, one at Point Loma, AB 28:106, 1974) and 25 September, and becoming common by the end of that month. In spring, the bulk of the wintering population departs in mid-April. The species is uncommon in late April, and rare in early May. The latest spring dates are 12 May (1976, one at Fallbrook, A. Fries), 18 May (1974, one at Middle Willows in Coyote Creek Canyon, ABDSP file), and 2–11 June (1975, one in East San Diego, AB 29:912 and 1036, 1975).

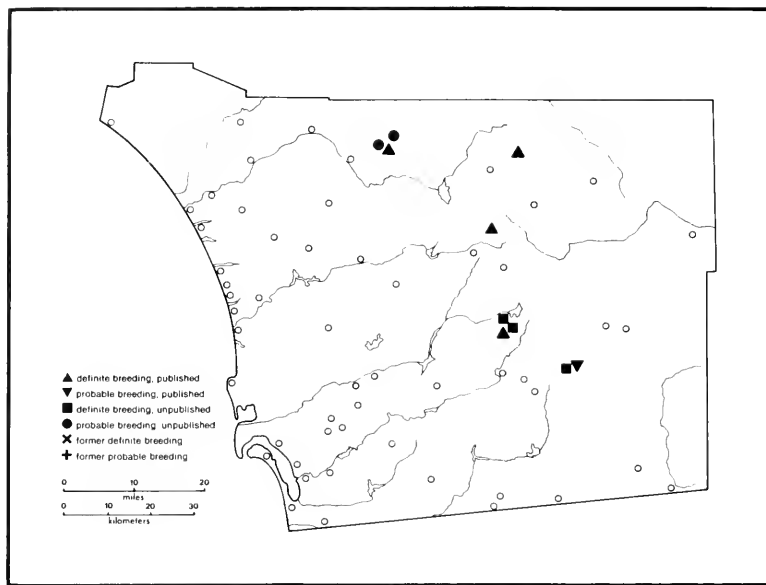
Subspecies: Three easily distinguishable races of White-crowned Sparrows visit San Diego County. The abundant winter visitor is *Z. l. gambelii* (Nuttall), identified in the adult plumage by its white lores and gray-and-rufous striped back. It breeds from Alaska south to central-southern British

Columbia and east to Manitoba. The status of *gambelii* is almost the same as that described for the species as a whole, except that 10 May (1976, one at Coronado Cays, J. Dunn) is the latest date on which it has been positively identified (the individuals seen on 12 and 18 May mentioned above were not identified to race). The subspecies *Z. l. pugetensis* Grinnell breeds along the Pacific coast from southwestern British Columbia to Humboldt County, and is distinguished from *gambelii* by its brown-and-blackish streaked back. *Pugetensis* is probably an uncommon winter visitor to San Diego County. Four specimens have been collected: La Jolla, 29 January 1925 (Grinnell 1928b), San Luis Rey, 27 January 1962 and 10 April 1963 (AMR 56 and Rea 1967), and Nestor, 19 October 1968 (SD 36876). Rea (1967) also reported that "during the period of 1958–1963 several other White-crowns of this race were banded by us at the Old Mission, leading me to believe that the race has largely been overlooked." The third form, *Z. l. oriantha* Oberholser, is easily identified by its black lores; it breeds in high mountains in southwestern Canada and the western United States. *Oriantha* occurs in San Diego principally as a rare spring migrant, with dates extending from 8 April (1904, Witch Creek, Bishop 1905) to 5 May (1885, San Diego, Belding 1890); the bird noted from 2–11 June 1975 was also black-lored. By 1 May, *oriantha* is just as likely to be encountered as late-lingering *gambelii*. *Oriantha* has been recorded only once in winter, on the basis of an immature collected at Volcan Mountain on 3 December 1904 (Bishop 1905). In fall, one was seen at Point Loma on 20 September 1973 (J. Dunn). Blaisdell (in Belding 1890) reported it seen first on 3 October 1884, with a flock on 6 October, but probably these were misidentified *gambelii*. Todd (1953a) and Phillips et al. (1964) believe the name *Z. l. leucophrys* (Forster) properly applies to the race usually called *gambelii*, and use the name *Z. l. nigrilora* Todd for the black-lored population breeding in northern Ontario, Quebec, and Labrador. Nominate *leucophrys* (= *nigrilora*) has not yet been reported in California, but might occur, particularly in late spring. It tends to have darker gray underparts than *oriantha* (but see Banks [1964b] and Browning [1974] for further complexities of geographical variation in White-crowned Sparrows).

WHITE-THROATED SPARROW

Zonotrichia albicollis (Gmelin)

Rare fall migrant and winter visitor. White-throated Sparrows visit shady, moist shrubbery—the same situations frequented by their closest relative, the Golden-crowned Sparrow. Most reports of the species are from the coastal lowland, reflecting the concentration of observer activity in this zone, but White-throated Sparrows are known also from the foothill and mountain areas: one at Warner Springs on 17 March 1970 (AFN 24:541, 1970), one at Julian on 11 May 1977 (AB 31:1049, 1977), and two at Lake Cuyamaca on 27 January 1978 (C. Edwards). Though they

MAP 118. Breeding Distribution of Dark-eyed Junco (*Junco hyemalis*)

sometimes associate with flocks of other migrant *Zonotrichiae*, very seldom is more than a single White-throated Sparrow seen at a time. Three which landed on a ship off San Diego, 11–13 October 1945 (Buckley 1946) is the largest number reported together. Three to four is the average to be reported in the county in a single year; the maximum of seven was in 1963–1964. Dates of occurrence extend from 10 October (1974, one at Point Loma, J. Dunn) to 8 May (1970, one at Point Loma, AFN 24:646, 1970) and 11 May (Julian, cited above). No White-throated Sparrow has yet been collected in San Diego County, but I photographed one at Point Loma on 25 October 1978.

GOLDEN-CROWNED SPARROW *Zonotrichia atricapilla* (Gmelin)

Fairly common to common winter visitor, accidental in summer. Golden-crowned Sparrows are often found with White-crowned Sparrows, but prefer shady and damp situations in dense chaparral, woodland undergrowth, and park shrubbery. They tend to avoid the dry, open weedy areas where White-crowns are especially abundant. Golden-crowns occur throughout San Diego County, but are rare in the Anza-Borrego Desert (one at Vallecito on 18 March 1978; one at Yaqui Well on 9 April 1978, P. Unitt). Their abundance fluctuates somewhat from winter to winter: large numbers such as 35 at San Marcos on 3 January 1976 (C. Edwards) and 50 in the Tijuana River Valley on 20

December 1975 (C. Lyons) are seen only in occasional years. Fall arrival is in early October, exceptionally very late September (29 September 1973, one at San Diego; 30 September 1975, one at Point Loma, G. McCaskie). Spring departure takes place in late April and early May. Very late individuals were noted at Point Loma on 12 May 1975 (J. Dunn) and 23 May 1964 (AFN 18:488, 1964), and in the Tijuana River Valley on 3 June 1978 (AB 32:1057, 1978). The one summer observation is of a single bird at Old Mission Dam on 14 August 1974 (AB 29:124, 1975).

DARK-EYED JUNCO

Junco hyemalis (Linnaeus) subsp.

Common resident, common to very common migrant and winter visitor. Breeding Juncos are restricted to the coniferous woodland of the mountain zone, but are one of the most common birds of this habitat. Their range covers all the main mountain ranges of the county that support coniferous woodland: Palomar, Hot Springs, Volcan, Cuyamaca, and Laguna. Numbers such as 36 along Agua Dulce Creek, Laguna Mountains, on 25 June 1978, and 67 on Hot Springs Mountain 3–4 June 1980 (P. Unitt) indicate the abundance of local breeding birds. Egg dates (9): 5 May – 13 July.

Juncos occur as migrants and winter visitors throughout San Diego County, frequenting open ground, short grass, and lawns, usually under or near trees. They especially favor

parks and coniferous or live oak woodlands, but also visit agricultural and residential areas, riparian woodland edges, chaparral, and desert-edge scrub, sometimes in large numbers. The species is usually uncommon in the Anza-Borrego Desert, and avoids coastal sage scrub and treeless grassland. Some high numbers are 180 at San Marcos on 3 January 1976 (W. Lenarz), 87 at Point Loma on 18 December 1976 (C. Edwards), 175 in the Tijuana River Valley on 20 December 1975 (C. Lyons), and 100 in the Vallejo Mountains on 15 April 1978 (P. Unitt). Numbers of winter visitors reaching San Diego County fluctuate considerably from year to year. The timing of fall arrival also shows annual variation; it is usually in late September, but may occur anywhere from mid-September (earliest reports, one in the Tijuana River Valley on 15 September 1968, G. McCaskie, and one at Point Loma on the same date in 1974, J. Dunn) to mid-October. In spring, most wintering Juncos depart in mid-April; a few remain until late April (latest, 24 April 1965, San Diego, G. McCaskie).

Subspecies: Geographical variation in Dark-eyed Juncos is especially complex and interesting, with 15 distinct races, several of them identifiable in the field. Of these 15, eight are definitely known from San Diego County. The local breeding population, and also a considerable majority of the winter visitors, are *J. h. thurberi* Anthony, which breeds from southern Oregon south to Marin County on the coast, and through the Sierra Nevada and high mountains of southern California to San Diego County. Of the 59 winter junco specimens from the county in SD, about 42 are *thurberi*. This is the familiar bird with the hood blackish in males, dark gray in females, a brown back, and light pinkish brown sides.

All the races that breed north of *thurberi* also reach San Diego County, but unfortunately taxonomists do not agree as to which name to apply to which population; here Phillips (1961) and Browning (1974) are followed. The next commonest subspecies is probably *J. h. similimus* Phillips (= *J. o. shufeldti* Coale of the A.O.U. (1957), Miller (1941), and most previous authors). *Similimus* breeds from southwestern British Columbia to central Oregon, mostly west of the Cascade Range; it differs from *thurberi* by its darker, more chocolate-colored back. Five or six county specimens of probable *similimus* are in SD. The specimen of "*shufeldti*" reported by Huey (1924) is actually *J. h. henshawi*.

The race which breeds from central interior British Columbia south to eastern Oregon, central Idaho, and north-western Montana is called *J. h. shufeldti* by Phillips. *J. o. montanus* Ridgway by Miller. This is the most abundant form wintering in southeastern California and Arizona, but has not been reported previously from San Diego County. *Shufeldti* (= *montanus*) differs from *similimus* and *thurberi* by its drab, grayish-brown back. One specimen collected 3 km (2 miles) east of Lakeside on 6 January 1924 (SD 34411), one at Point Loma on 23 March 1944 (SD

18855), and another at San Luis Rey in December 1961 (AMR 67) have been identified as *shufeldti* by A. R. Phillips.

The subspecies that breeds in coastal southeastern Alaska and British Columbia, *J. h. oregonus* (Townsend), rarely migrates south of Monterey County. It has a more rufous back than the preceding races. There is only one record of *oregonus* from San Diego County, a specimen collected at San Luis Rey on 17 January 1962 (Rea 1967, SBMNH 127).

All four of these races (*thurberi*, *similimus*, *shufeldti*, and *oregonus*) are similar and probably cannot be distinguished from each other in the field, but are all easily recognized as "Oregon Juncos." The races that breed farther north and northeast differ conspicuously by having a concave margin between the dark hood and white belly and gray or partly gray sides. These "Slate-colored Juncos" are uncommon winter visitors in San Diego County. Usually three or four is the maximum to be seen in a single large flock of Juncos, but 10 were noted at Point Loma on 16 December 1974 and 3 January 1975 (J. Dunn). Dates for Slate-colored Juncos extend from 19 October (1974, two at Point Loma) to 2 April (1969, one at Presidio Park, G. McCaskie). Two races of this group occur in our area, *J. h. henshawi* Phillips (= *J. h. cismontanus* Dwight of Miller) is probably more frequent. It has a definite contrast between a brown back and a grayer head, and often has considerable brown on the flanks, especially in females. It breeds from southern Yukon south to central British Columbia and central western Alberta. *Henshawi* is represented by six specimens in the SD collection. The race which breeds from western Alaska east through subarctic and boreal Canada to Newfoundland is nominate *J. h. hyemalis* (Linnaeus), and has very little brown in the plumage (more in females). It is probably less frequent in San Diego County than *henshawi*. Three positively identified specimen records have been published: one 64 km (40 miles) east of San Diego on 24 January 1884 (Belding 1890, Grinnell and Miller 1944) and two at San Luis Rey on 8 January and 30 December 1962 (Rea 1967). Three other Slate-colored Juncos in SD, identified by A. R. Phillips, are nominate *hyemalis* rather than *henshawi*: Point Loma, 23 March 1944 (18856), and Mission Gorge, 22 December 1930 (14123 and 14124).

The Pink-sided Junco, *J. h. mearnsi* Ridgway, is easily recognized by its medium-to-pale gray head (paler even than in females of any of the preceding races), black lores in males, very dull gray-brown back, and bright pinkish-buff sides. It breeds from southeastern Alberta and southwestern Saskatchewan south to eastern Idaho and northern Wyoming. It is probably a rare, often overlooked, winter visitor. Only one specimen has been reported, collected 6 km (4 miles) southwest of Ramona on 18 December 1930 (Huey 1931b, SD 14117). Additional sight records are from Point Loma: two on 16 October 1974, one on 19 October 1974, one on 9 November 1974 (J. Dunn), and one on 21 October 1975 (AB 30:130, 1976).

The Gray-headed Junco, *J. h. caniceps* (Woodhouse), resembles *meansi* in head coloration (including black-lored males), but has a contrastingly bright rufous back and gray sides. It breeds from southern Idaho and southern Wyoming south to Inyo County (where it hybridizes with *thurberi*), northern Arizona, and northern New Mexico. The Gray-headed Junco is a rare winter visitor to San Diego County. Two specimens are in SD, and two others were reported by Stephens (1924) and Willett (1933). Since it is easily identifiable in the field, there are also many reliable sight records. It was until recently usually regarded as a distinct species, so it attracted more attention from observers than the Pink-sided Junco. Most occurrences are between mid-October and mid-February, with extreme dates being 25 September (1960, one at Palomar Mountain State Park, AFN 15:78, 1960) and 13 April (1978, one at Mount Laguna, B. Cord). Only one or two *caniceps* are usually seen at a time, but five were at Palomar Mountain on 6 February 1981 (AB 35:337, 1981). Smith (1907) reported large flocks of juncos at Julian between 18 November and 3 December 1906, in which Gray-headed Juncos were "in the minority, but still in sufficient numbers to be noted in every flock." This race has been reported from many localities in the coastal lowland, foothill, mountain, and desert-edge zones, but probably it is most frequent in the mountains.

LARK BUNTING

Calamospiza melanocorys Stejneger

Rare fall migrant, very rare winter visitor and spring migrant in open grassland, agricultural areas, and weedy fields. Most fall reports during the 1960s and 1970s were from the Tijuana River Valley; single individuals have also been noted at Las Flores (21 September 1973, AB 28:111, 1974) and Lake Henshaw (18 November 1978, P. Unitt). Earlier fall records were from La Puerta (=Mason) Valley (13 September 1913, SD 1851), San Diego (1 November 1914, SD 34131), and 3 km (2 miles) south of Lemon Grove (2 November 1943, one collected from flock of three, SD 18758). Lark Buntings usually occur singly at this season, with the three near Lemon Grove, and three in the Tijuana River Valley on 12 October 1963 (G. McCaskie) being maxima. Fall observations are somewhat concentrated from late September to mid-October, but several are scattered from early September (one in the Tijuana River Valley on 6 September 1971, AB 26:124, 1972) through late November.

Lark Buntings are less frequent in winter, with only eight records between 14 December (1881, El Cajon, Grinnell and Miller 1944) and 30 March (1971, Balboa Park, bird present from 20 December 1970, AB 25:630, 1971). Again at this season, they occur singly, or in twos, as in the Tijuana River Valley on 20 December 1969 (AFN 24:541, 1970) and 24 March 1971 (AB 25:630, 1971). Other winter

records are from 5 km (3 miles) west of Santee, 26 January 1921 (SD 34128), Sweetwater Reservoir, 5–8 February 1977 (AB 31:375, 1977), south end of Silver Strand, 12–15 February 1978 (AB 32:402, 1978), and Tijuana River Valley, 16 December 1978 (AB 33:668, 1979).

In spring, Lark Buntings occur very sporadically— noted only in five years in this century—but several of the records involve small flocks: up to 10 in the Tijuana River Valley from 10 to 19 April 1966 (McCaskie et al. 1967c, SD 36022); five at Scissors Crossing on 28 April 1968 (AFN 22:577, 1968); up to four at Campo from 4 to 29 April 1977 (AB 31:1049, 1977). A single bird was collected at San Diego on 8 May 1915 (SD 34130). The spring of 1978 saw a small invasion of Lark Buntings into southern California, and two pairs nested that year in the eastern Mojave Desert. In San Diego County, up to three were at Coronado Cays 3–5 May (P. Unitt), one was at Mission Bay on 7 May (D. Herron); another was at the south end of San Diego Bay on 13 May (M. Evans), and yet another was at the Horno Area of Camp Pendleton on 20 May (A. Fries).

Unequaled invasions of Lark Buntings into San Diego County occurred in the springs of 1884, 1885, and 1886. The birds were reported from Poway, El Cajon, San Diego, National City, with flocks being specifically noted at Campo and National City ("thirty or forty males") in May 1884, and at San Diego in April 1884 (Belding 1890). Holterhoff (1884a) reported "large flocks" at National City in early May 1884, and stated that on 25 May "they are everywhere abundant on the mesas, and apparently breeding." Nesting activity was never actually demonstrated, however. See Wilbur et al. (1971) for a summary of California records.

MCCOWN'S LONGSPUR

Calcarius mccownii (Lawrence)

Very rare fall vagrant. Like the other longspurs, McCown's occur in fields of bare, plowed dirt, where they usually associate with flocks of Horned Larks. All but one of the nine reports are for the Tijuana River Valley; the exception was one at Otay Mesa on 6 November 1971 (AB 26:124, 1972). McCown's are usually found singly, but Laplands and Chestnut-collareds are sometimes present with them in the Horned Lark flocks; two McCown's were noted together 22–27 November 1975 and 31 October – 7 November 1976 (G. McCaskie). The species has been seen most often in November; recorded dates extend from 19 October (1969, AFN 24:100d, 1970) to 6 December (1975, AB 30:770, 1976). The one specimen for the county was collected on 6 November 1965 (McCaskie 1966b, SD 35525 – specimen label gives date as 30 October).

LAPLAND LONGSPUR

Calcarius lapponicus alascensis Ridgway

Rare fall migrant, casual winter visitor. Lapland Longspurs occur in fields of bare soil or short grass with flocks of

Horned Larks. Most reports are from the Tijuana River Valley, but the species has been noted also at Mission Bay (one on 2 October 1909, Stephens 1910, SD 917), Point Loma (one on 13 December 1962, AFN 17:360, 1963), Otay Mesa (one on 14 November 1971, AB 26:124, 1972), and Lake Henshaw (one on 30 November 1977 and 29 December 1977, AB 32:264 and 402, 1978). Probably Lapland Longspurs could be found wherever large numbers of Horned Larks congregate. Although Laplands are usually seen singly, small groups have been noted occasionally in November: up to five on 11 November 1964 and 10 from 22 to 27 November 1975 (G. McCaskie). Most records are for the period mid-October through mid-December. One in the Tijuana River Valley on 16 October 1975 (AB 30:130, 1976) is the earliest, except for the individual mentioned above collected at Mission Bay – in the unusual habitat of tidal salt marsh. Late observations are of single birds in the Tijuana River Valley on 17 December 1977 (L. Sansone), 3 January 1965 (AFN 19:334, 1965), and 13 January 1978 (AB 32:402, 1978), and at Lake Henshaw on 29 December 1977 (cited above). Two specimens have been collected in the county, the one at Mission Bay, and another in the Tijuana River Valley on 31 October 1964 (McCaskie 1966b, SD 35103).

CHESTNUT-COLLARED LONGSPUR

Calcarius ornatus (Townsend)

Uncommon to rare fall migrant; rare winter visitor. Chestnut-collared Longspurs often flock with Horned Larks in open fields as do the other longspurs, but occasionally form pure flocks of their own species; they also visit grass a bit taller and denser than that preferred by the other longspurs. Again, most reports are from the Tijuana River Valley, where up to 10 were seen on 19 October 1975 (G. McCaskie), and the only specimen for the county was collected on 25 October 1964 (McCaskie 1966b, SD 35104). Chestnut-collared Longspurs have been observed also several times at Lake Henshaw, with a maximum of 20 on 13 November 1977 and 7 January 1978 (AB 32:265 and 402, 1978). Other localities are Point Loma (one on 9 October 1974, J. Dunn) and Whalen Lake (25 on 6 February 1977, AB 31:375, 1977). The species occurs primarily from mid-October to late November. Early records are of up to three in the Tijuana River Valley, 8–15 October 1966 (AFN 21:80, 1967), one at the same locality on 12 October 1964 (AFN 19:82, 1965), and the one cited above on 9 October 1974. It becomes less frequent through December, and for January and February the only reports are the two flocks mentioned earlier, plus single individuals at Lake Henshaw on 9 January 1977 (AB 31:375, 1977) and 13 January 1978 (AB 32:402, 1978).

New World Orioles and Blackbirds

Family *Emberizidae*

SUB-FAMILY *ICTERINAE*

BOBOLINK

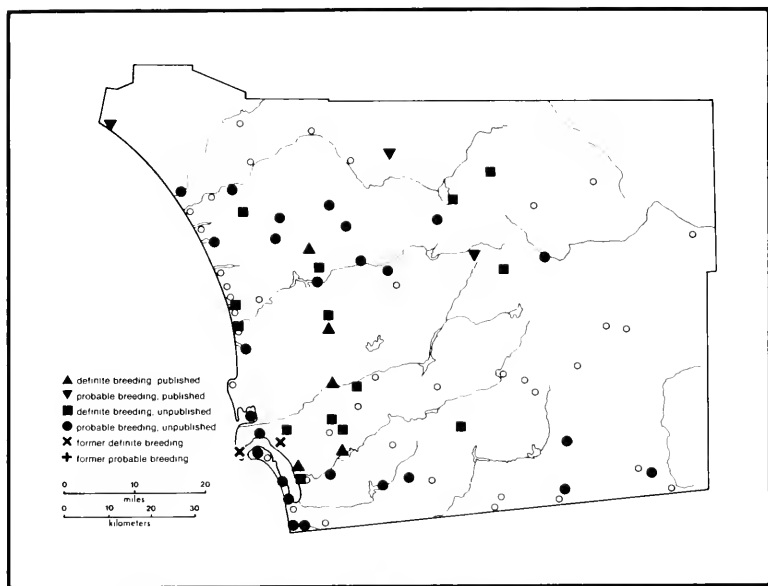
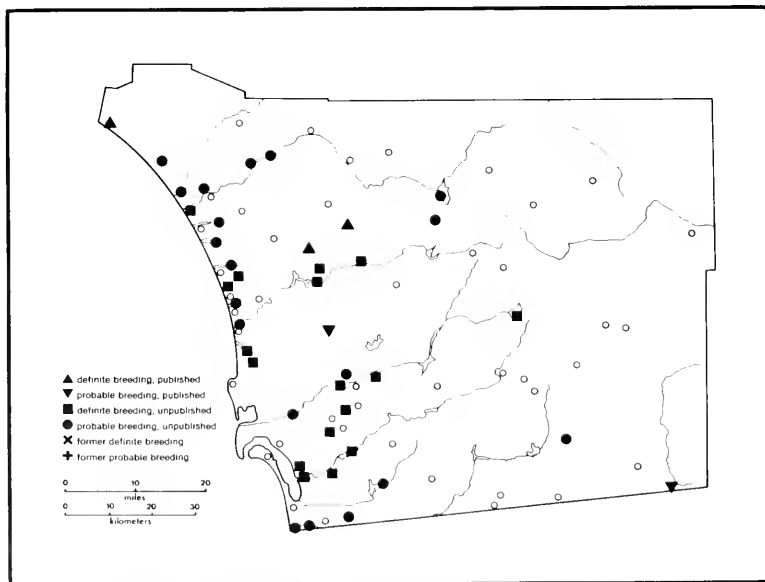
Dolichonyx oryzivorus (Linnaeus)

Uncommon to fairly common fall migrant, casual in late spring and summer. Migrating Bobolinks stop in dense growths of tall damp grass and fields of irrigated crops such as alfalfa (rice, their favorite, is not grown in San Diego County). The species is known principally from the Tijuana River Valley, where it occurs in fair numbers every year, and in large numbers in occasional years (1969, up to 60 between 26 September and 18 October, AFN 24:100c, 1970; 1973, up to 25 between 3 September and 8 October, AB 28:110, 1974; 1976, 25 on 1 October 1976, G. McCaskie). It occurs rarely in the park habitats of Point Loma, and has been reported twice at Del Mar and once at Otay Mesa (9 October 1971, AB 26:123, 1972). Undoubtedly Bobolinks could be found in other places if searched for in agricultural land near the coast. Peak abundance is in late September and early October, with the total season of recorded occurrence extending from 3 September (1973, one in the Tijuana River Valley) to 13 November (1976, same locality, G. McCaskie). Individuals have been seen twice in late spring (Point Loma, 6 June 1974, AB 28:854, 1974; Tijuana River Valley, 3 June 1977, AB 31:1049, 1977), and once in midsummer (Tijuana River Valley, 25–26 July 1976, AB 30:1005, 1976).

WESTERN MEADOWLARK

Sturnella neglecta Audubon subsp.

Common breeding resident, very common winter visitor. The Western Meadowlark is a characteristic inhabitant of grassland and open agricultural land, and is found less abundantly on mesas with scattered low herbaceous growth, cleared ground with low weeds, and in low vegetation such as *Salicornia* around lagoons and estuaries. It occurs in these habitats throughout the county, with largest numbers in the coastal lowland in winter: 100 in the San Luis Rey River Valley, Oceanside on 31 December 1977 (P. Unitt); 300 in the Tijuana River Valley on 18 December 1976 (C. Lyons). Meadowlarks are found throughout the coastal slope of the county all year, remaining through midwinter as high as Lake Cuyamaca (15 on 21 January 1978). In the Anza-Borrego Desert, the species is not known to nest, and is largely absent in summer. It has been noted in this area only from 5 September (1978, four at Vallecito) to 9 April (1978, five in the Borrego Valley, P. Unitt), except for single birds at Seventeen Palms Oasis on 16 June 1973 and at Elephant Trees Ranger Station in August 1981 (ABDSP

MAP 119. Breeding Distribution of Western Meadowlark (*Sturnella neglecta*)MAP 120. Breeding Distribution of Red-winged Blackbird (*Agelaius phoeniceus*)

file). There is evidently a considerable migration of meadowlarks in and out of San Diego county, the nature of which has not been investigated. Egg dates (40): 11 March – 3 June; Sharp (1907) reported 15 June. The species sometimes nests in winter as well. Sechrist (1915b) found eggs near National City on 15 December 1914; Abbott (1927c) reported fledglings at Sweetwater Lake on 24 December 1925 and near Mission Gorge on 27 December 1925 (SD 33467).

Subspecies: Most winter Western Meadowlarks in San Diego County are the grayer nominate *neglecta*. Some individuals of the buffier and more rufous race *S. n. confluenta* Rathbun reach San Diego County as well, as suggested by a few specimens such as two collected at San Diego on 6 November 1921 (SD 2305 and 2306). The identity of our local breeding population needs more study. One specimen in breeding condition (blue-black bill) from 3 km (2 miles) west of Alpine on 12 February 1921 (SD 33464) is very gray, but another black-billed bird from San Luis Rey on 4 January 1963 (AMR 291) is fairly rufous. SD has no adults collected in the county from March to September.

RED-WINGED BLACKBIRD

Agelaius phoeniceus (Linnaeus) *subsp.*

Common to abundant resident. For nesting, Red-winged Blackbirds use fresh-water or brackish marshes, or dense vegetation around lakes, ponds, streams, and ditches, wherever there is a little water or some growth of cattails or tules. For foraging, this species commonly exploits agricultural land and park lawns as well as marshes. In winter, they visit tidal salt marshes with taller vegetation such as *Spartina*. The breeding range of this species covers most of the coastal slope of the county, extending east to Lake Henshaw (two on 10 June 1980, P. Unitt), Lake Cuyamaca (eggs taken on 12 and 18 June 1921, WF), Cameron Valley (pair on 26 March 1978), and Jacumba (26 May 1894, Ridgway 1901; five carrying nest material on 18 March 1978, P. Unitt). Red-winged Blackbirds occur as rare or uncommon migrants and winter visitors to the Anza-Borrego Desert (10 on 16 March 1975, G. McCaskie), but insufficient information is available from this area to define the species' status there further. The largest numbers are seen in the coastal lowland where flocks of non-breeding birds congregate to forage or roost: 750 in the San Luis Rey River Valley, Oceanside, on 28 December 1980 (J. Oldenettel); 1000 in the Otay River Valley on 17 December 1977 (G. McCaskie). The species is not sedentary, but there is as yet no evidence of a large-scale migration into or out of San Diego County. Egg dates (38): 20 March – 18 June.

Subspecies: *A. p. neutralis* Ridgway, which ranges on the coastal slope from San Luis Obispo County south into northwestern Baja California, is our resident race. Other forms possibly occur rarely or uncommonly as winter visitors. Van Rossem (1926) reported an adult male collected at Witch Creek on 13 April 1904 which possibly represents the race

A. p. californicus Nelson, native to the Central Valley. *Californicus* males have the yellow fringe to the red epaulet much reduced or lacking. This specimen may have been a variant of the local *neutralis*, however, especially considering its presence during the breeding season. Van Rossem (1926) also reported two females taken at Jamacha on 15 October 1923 (SD 2801 and 2806) as *A. p. sonorensis* Ridgway, the form breeding in the desert regions from southeastern California and central Arizona south to north-eastern Baja California and Sonora. These birds show the paler coloration of *sonorensis*, but have the thicker bills of *neutralis*, so must be considered intermediates.

TRICOLORED BLACKBIRD

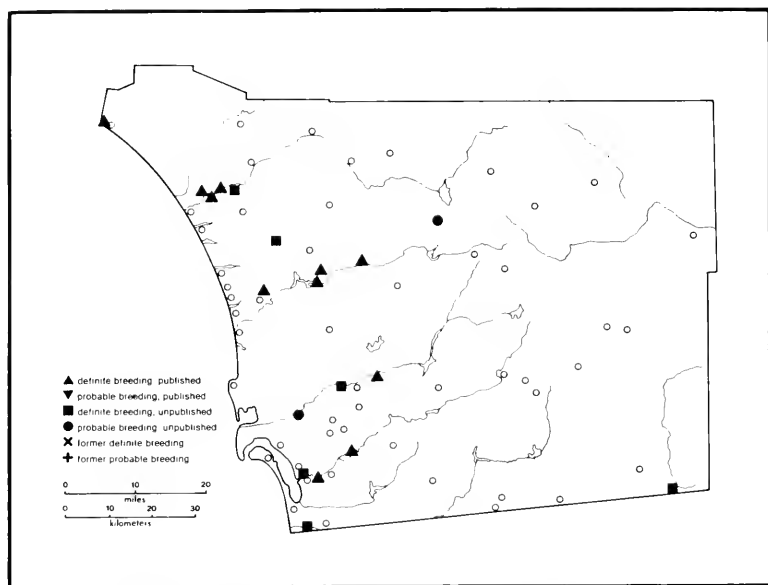
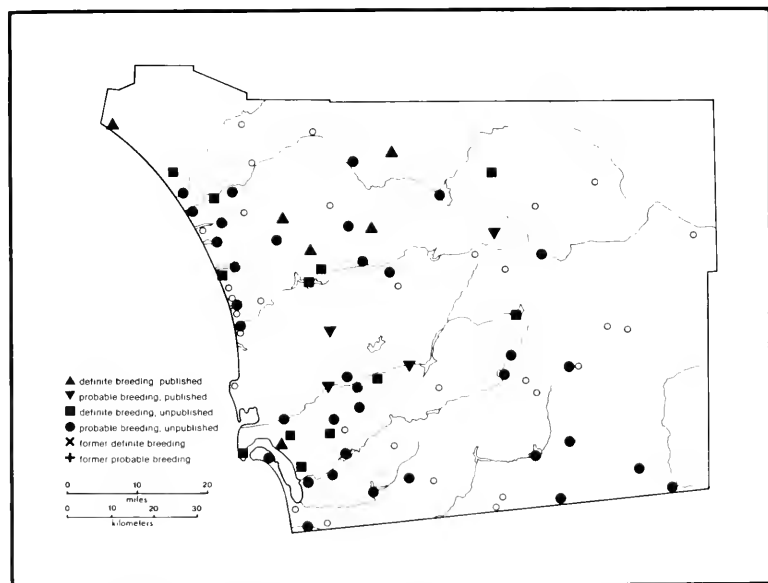
Agelaius tricolor (Audubon)

Very common to abundant, but localized, resident. Tricolored Blackbirds nest in large, dense colonies of 50 to 1000 pairs in freshwater marshes, usually of cattails, also of tules, willows, mulefat, or tamarisks. Foraging takes them, like other blackbirds, to agricultural areas, lakeshores, and damp lawns. The species is for the most part confined to the coastal lowland, but one colony is known outside this area, at Jacumba (26 April 1964; 100 on 10 April 1976; 75 on 18 March 1978, some carrying nest material, G. McCaskie). There are two records of vagrants outside the breeding range in the county: 4 April 1895, elevation 700 m (2300 feet) in San Felipe Valley (SD 793), and 1 April 1895, elevation 270 m (900 feet) at Palmetto Spring in the Anza-Borrego Desert (SD 792). Tricolored Blackbirds do not have well-defined migrations, but are nomadic, wandering during the non-breeding season, and occupying colony sites intermittently. The recovery near Fallbrook of a bird banded at Laguna Beach, Orange County (Neff 1942) indicates short-distance dispersal. The most extensive study of the distribution of Tricolored Blackbird is that by Neff (1937), who reported colonies in San Diego County "near San Clemente" (probably San Mateo or San Onofre Creek mouths, 100 nests on 12 May 1935), near San Luis Rey (500 nests on 17 May 1936), at Whalen Lake (200 birds on 19 May 1932), near San Pasqual (1000 nests on 15 May 1936), and at a reservoir on the east edge of Chula Vista (750 nests on 16 May 1936). A recent important colony site is in the Tijuana River bed adjacent to Dairy Mart Road. Large concentrations in the non-breeding season include 4000 at Guajome Lake on 22 December 1979 (J. MacGregor), 1000 in the Otay River Valley on 15 December 1979 (G. McCaskie), and 1500 in the Tijuana River Valley on 5 November 1977 (P. Unitt). Egg dates (42): 30 March – 26 May.

YELLOW-HEADED BLACKBIRD

Xanthocephalus xanthocephalus (Bonaparte)

Generally an uncommon to rare migrant and winter visitor, and very rare summer visitor, but a common to very common winter visitor to the San Luis Rey River Valley

MAP 121. Breeding Distribution of Tricolored Blackbird (*Agelaius tricolor*)MAP 122. Breeding Distribution of Brewer's Blackbird (*Euphagus cyanocephalus*)

in Oceanside, especially at Guajome Lake. Yellow-headed Blackbirds occur mainly in fresh-water marshes in the coastal lowland, and sometimes forage with flocks of other blackbirds in agricultural areas. Examples of numbers at Guajome Lake are 75 on 22 December 1979 (I. MacGregor), 100 on 15 January 1972, 200 on 28 January 1969, and exceptionally, 400 on 14 December 1970 (A. Fries); at Whalen Lake, 60 on 31 December 1977 (W. T. Everett). Outside the San Luis Rey Valley, numbers as large as 10 (22 April 1962, Mission Valley; 20 December 1980, Tijuana River Valley, G. McCaskie) are unusual, at least in recent years. Formerly, the species may have been more common. Emerson (1887) reported "small flocks" at Poway in the spring of 1884, and Belding (1890) noted a remarkable flock of about 1000 at San Diego on 19 April of the same year. Merriam (1896) reported "large flocks of them on the mustard seven miles [11 km] west" of Twin Oaks Valley in spring of 1889 or 1894. Migrants may arrive as early as mid-August in fall (11 August 1925, Lake Hodges, SD 9921; 16 August 1980, one in the Tijuana River Valley, G. McCaskie—none summered that year), and may remain as late as early May in spring. East of the coastal lowland, Yellow-headed Blackbirds are very rare migrants through the foothill zone and Anza-Borrego Desert between 30 March (1892, Borrego Springs, SD 772) and 6 May (1978, one in Mason Valley, P. Unitt).

In 1979 and 1981, Yellow-headed Blackbirds summered in the Tijuana River Valley. Six on 20 May 1979 (G. McCaskie) decreased gradually to one on 27 June (R. C. Smith); 20 on 9 May 1981 decreased to one on 12 July (G. McCaskie). The birds possibly bred locally, but neither nests nor young were ever found. W. T. Everett saw six near Old Mission Dam on 2 June 1976, while A. Fries saw a single bird at Guajome Lake on 26 June 1976. A. M. Ingersoll (in Willett 1912) believed the species "probably breeds at Warner's Ranch." Stephens (1919a) said "breed in small colonies in tule marshes." Sams and Stott (1959) wrote "a few records of breeding locally (Murray Res.)." For all this, no eggs or young have ever been collected in San Diego County, and no details of nesting have ever been published. Nesting of Yellow-headed Blackbird in San Diego County still remains to be demonstrated conclusively.

RUSTY BLACKBIRD

Euphagus carolinus (Müller)

Casual late fall vagrant, accidental in winter. Three fall records: one at Monte Vista Ranch, Jamacha, 14 November 1925 (Sefton 1926, SD 10163); one at Borrego Springs on 27 November 1964 (AFN 19:81–82, 1965); and one at Point Loma 9–10 November 1974 (AB 29:124, 1975). The single winter observation is of two in the Tijuana River Valley 11–28 February 1981 (AB 35:337, 1981). Rusty Blackbirds prefer to forage in shallow puddles with low fringing vegetation under trees. They do not associate with other species of blackbirds.

Subspecies: The specimen from Jamacha has not been critically identified to race, but it is far more likely to be nominate *E. c. carolinus* (Müller), which breeds widely in Alaska and Canada, than *E. c. nigrans* Burleigh and Peters, which breeds only in Newfoundland and Nova Scotia.

BREWER'S BLACKBIRD

Euphagus cyanocephalus (Wagler) subsp.

Common resident, abundant migrant and winter visitor. Brewer's Blackbirds inhabit agricultural and residential areas, parks, damp grassy areas, ponds, and lakeshores. Nesting birds need trees or tall bushes in or near these foraging habitats. The species is thoroughly adapted to current methods of human land use, and has undoubtedly increased greatly since the European settlement of southern California. Dense foliated conifers, especially cypresses, are favored for nest sites; other known sites include live oaks, willows, sycamores, elderberries, eucalyptus, pepper trees, and even buildings. The breeding range covers the entire coastal slope of the county, east to Warner Valley (eggs on 28 June 1921, WF), Lake Cuyamaca (25 on 30 April 1978, collecting nest material), Mount Laguna (six on 25 June 1978, P. Unitt), and Jacumba (juvenile on 13 July 1974, J. Dunn). Egg dates (26): 5 March – 28 June.

In the Anza-Borrego Desert, the Brewer's Blackbird is probably only a winter visitor to agricultural and residential areas near Borrego Springs: 30 on 16 March 1975 and 10 on 10 April 1976 (G. McCaskie). Specimens were collected in San Felipe Valley on 22 March 1895 and at Borrego Springs on 30 April 1896 (SD 829–830). One was seen at the Anza-Borrego Desert State Park headquarters on 20 May 1974 (ABDSP file). The possibility of the species' nesting in the Borrego area might profitably be investigated since it has recently colonized trees around ranch houses near Mecca in the Coachella Valley.

Often large flocks of Brewer's Blackbirds can be seen in the coastal lowland in winter, such as 2200 at Talone Lake, Oceanside on 22 December 1979 (F. Dexter), and 1700 at Bonita on 15 December 1979 (J. Oldenettel). Probably this indicates an influx of winter visitors from north of San Diego County, but the timing or extent of these movements has not yet been studied.

Subspecies: A. M. Rea (pers. comm.) recently has studied geographic variation in Brewer's Blackbird. He tentatively recognizes three races, based on variations in the color and size of females: *E. c. minusculus* Grinnell, a small, moderately pale form breeding at least in the lowlands of California (possibly farther north as well), nominate *E. c. cyanocephalus* (Wagler), a larger (wing over 118 mm), paler or browner population breeding in the Great Basin and Rocky Mountain regions), and *E. c. breuisteri* (Audubon), in which the females are blackish and somewhat glossy (approaching the male plumage), known from eastern Alberta, Saskatchewan, Minnesota, and Wisconsin. All but one of the fourteen adult female Brewer's Blackbirds examined

from San Diego County appear to represent the locally breeding *minusculus*, including one collected along Carrizo Creek on the desert slope on 3 December 1906 (SD 831). The exception, collected at La Mesa Heights on 2 October 1926 (SD 26674), is evidently a migrant of nominate *cyanocephalus*. Its wing chords measure 117.9 and 118.6 mm, and it is much browner on the throat and breast than any other San Diego County bird, but closely matches in color a specimen from Wyoming.

COMMON GRACKLE

Quiscalus quiscula versicolor Vieillot

Accidental, two records. An uncatalogued, mounted specimen in the San Diego State University teaching collection is labeled with the locality La Cresta Road, El Cajon, and with the date 20 November 1967 (not 1969 as published in AB 30:893, 1976 and by Garrett and Dunn 1981; specimen reexamined for me by David Rimlinger). The specimen was originally labeled as a Brewer's Blackbird and was reidentified by Jon Dunn as a Common Grackle in 1975. Another Common Grackle at Carlsbad from 9 February to 26 March 1977 was photographed (AB 31:375, 1977).

GREAT-TAILED GRACKLE

Quiscalus mexicanus (Gmelin) subsp.?

Casual vagrant, three records. One female was seen at Sweetwater Reservoir 5–6 February 1977 (AB 31:375, 1977). A male was photographed at Agua Caliente Springs on 22 May 1981 (P. Roullard). A female was photographed at the Oceanside harbor 22–24 November 1981 (S. I. Bond, B. Cord). This species has been gradually extending its range in California since it first reached the Colorado River in 1964, so more frequent occurrences may be expected in San Diego County in the future.

Subspecies: Not positively known for lack of a specimen. The bird collected near Imperial Dam on the Colorado River on 6 June 1964 (McCaskey et al. 1966) has been identified as *Q. m. nelsoni* (Ridgway) by A. M. Rea.

BRONZED COWBIRD

Molothrus aeneus (Wagler)

Casual summer visitor to Jacumba, with one breeding record. The Bronzed Cowbird was reported in four consecutive years: one or two from 3 to 17 June 1973 (AB 27:920, 1973), a pair from 23 June to 17 July 1974 (AB 28:951, 1974), one on 29 June 1975 (AB 29:1036, 1975), and one on 3 May 1976 (AB 30:893, 1976). A juvenile was accompanying a flock of Brewer's Blackbirds on 13 July 1974 (J. Dunn).

Subspecies: No specimens, but presumably *M. a. loyiei* Parkes and Blake, breeding from the lower Colorado River Valley south to Colima.

BROWN-HEADED COWBIRD

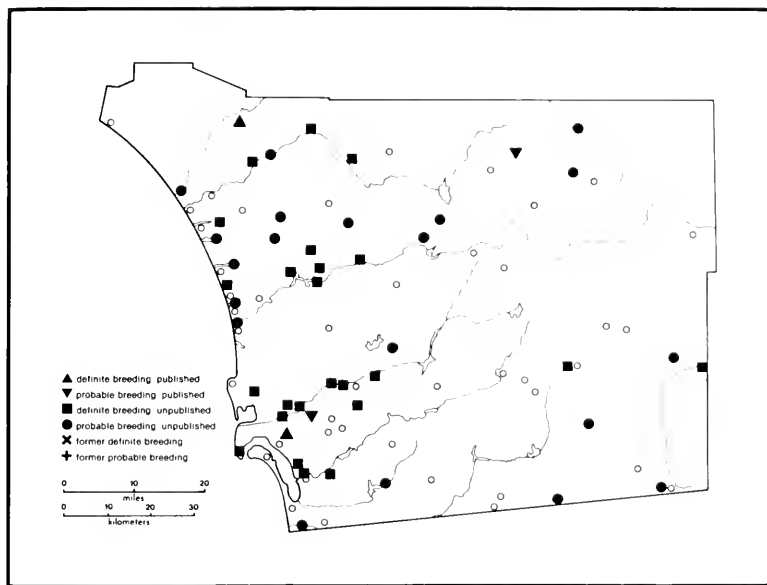
Molothrus ater (Boddaert) subsp.

Common and widespread summer resident; common to abundant migrant and localized winter visitor. The distribution of the Brown-headed Cowbird is one of the most complex of any species of bird in San Diego County. During the breeding season, cowbirds occur almost throughout the county. They are especially numerous in riparian woodland adjacent to grass or agricultural land. Riparian woodland supports a rich diversity of nesting birds from which the cowbirds select hosts. Gregarious, terrestrial foraging habits lead the cowbirds to use nearby open country. The species may be found in the breeding season in a great variety of other habitats, from coastal lagoons (11 at San Elijo Lagoon on 4 May 1975, SEL surv.) to montane coniferous woodland (three at Hot Springs Mountain on 4 and 24 June 1980; six including one fledgling, on Agua Dulce Creek, Laguna Mountains on 25 June 1978) and desert oases (eight, including a copulating pair, at Carrizo Marsh on 6 May 1978, P. Unitt; four in Coyote Creek Canyon on 1 July 1978, S. Goldwasser). Availability of suitable host species determines the breeding distribution of Brown-headed Cowbird. Known victims in San Diego County include Willow Flycatcher, Western Wood Pewee, Blue-gray and Black-tailed Gnatcatchers, Hutton's, Bell's and Warbling Vireos, Yellow Warbler, Common Yellowthroat, Hooded Oriole, American and Lesser Goldfinches, Dark-eyed Junco, and Song Sparrow. Parasitic nesting habits enable cowbirds to exploit for reproduction far more area than they find suitable for foraging. Egg dates (38): 27 April – 30 June.

The breeding population arrives usually in mid-March, sometimes in late March. In the riparian woodland at Old Mission Dam, cowbirds remain in numbers through late August, then decline until the last ones leave in mid-October. Timing of migration in other habitats and at other localities remains to be investigated.

Cowbirds are known to winter only in the coastal lowland, where they occur mostly in agricultural areas, especially in irrigated fields and around cattle yards (250 at Whalen Lake on 28 December 1980, G. McCaskey; 1500 in the Tijuana River Valley on 20 December 1975, C. Lyons). Migrants may be seen in the foothill zone at least to late November (four at Lake Henshaw on 26 November 1977, P. Unitt). Migrating Brown-headed Cowbirds often are seen far out to sea in both spring and fall, suggesting that seasonal changes in the distribution of the species in San Diego County involves long-distance migration rather than local shifting of a resident population.

Few species have increased in abundance in San Diego County as dramatically as the Brown-headed Cowbird. Prior to 1911, the species was known from only two specimens collected at Borrego Springs on 30 April 1896 (SD 767–768), and Cooper's (1874) statement that it "occurred in flocks on the east side of summit [of Cuyamaca Peak] only, at 4500 feet [1370 m] altitude," in the spring of 1862.

MAP 123. Breeding Distribution of Brown-headed Cowbird (*Molothrus ater*)

The first record for the coastal lowland was a specimen taken at San Diego on 10 December 1911 (Grinnell 1915), and breeding was first known in 1915 (female "near laying" collected at National City on 14 May, SD 33664; eggs taken in the same vicinity, from nests of Bell's Vireos, on 16 and 18 May, WF). The first published record of cowbirds breeding in the county also involved parasitism of Bell's Vireos, at Fallbrook on 11 June 1919 (Sharp 1920). In the next few years, the species increased rapidly, until by 1933, Willett was able to write, concerning southern California as a whole, "it is well established throughout our district, frequenting the willow regions in large numbers in summer and found commonly around farms and in parks at other seasons of the year." By the 1970s, the population of cowbirds had probably stabilized, at least in the coastal lowland. Their relentless brood-parasitism has almost eliminated the local populations of Willow Flycatcher, Blue-gray Gnatcatcher, and Warbling Vireo, and is gradually eroding the remnants of those of Bell's Vireo and Yellow Warbler, while less sensitive species such as Common Yellowthroat, Lesser Goldfinch, and Song Sparrow keep the cowbird population high. The environmental changes that permitted this proliferation of Brown-headed Cowbirds are not known, but may be related to the widespread use of irrigation in agriculture.

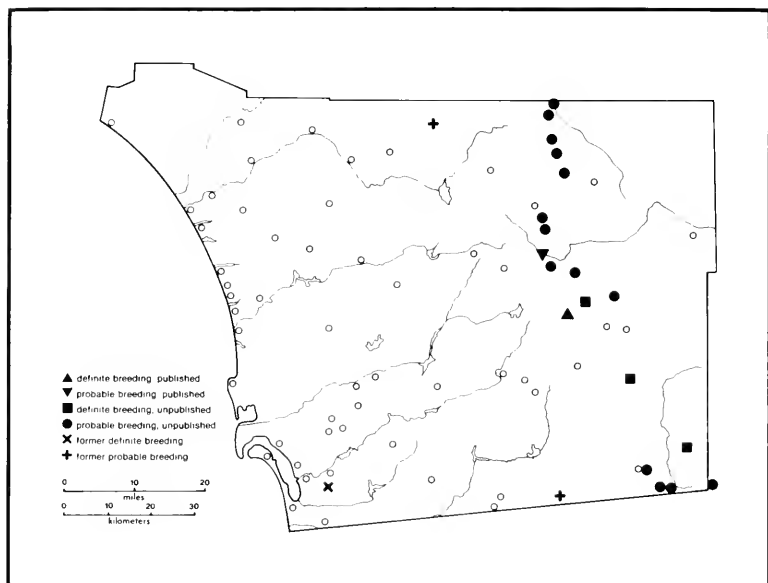
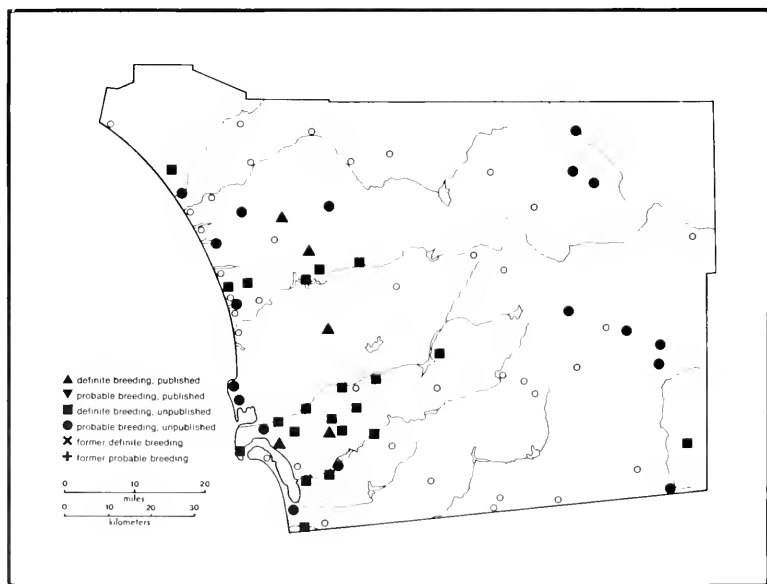
Subspecies: *M. a. obscurus* (Gmelin), which breeds from northern California, southwestern Utah, and Texas south

to central Mexico, is the predominant race in San Diego County. *M. a. artemisiae* Grinnell, a larger form breeding in the Great Basin, Rocky Mountain, and Great Plains regions, has been reported twice in migration and winter: Borrego Springs, 30 April 1896 (Grinnell 1915, one of two specimens mentioned above), and San Luis Rey, specimens on 24 January and 23 November 1962 (Rea 1967). One specimen (Coronado, 1 March 1978, SD 40587), examined by A. M. Rea, is closest to *M. a. ater* (Boddaert), as indicated by its deep, broad bill (width of mandible at base 9.3 mm). Nominate *ater* breeds in the eastern United States as far west as southeastern Colorado and central Texas.

SCOTT'S ORIOLE

Icterus parisorum Bonaparte

Uncommon spring migrant and summer resident, very rare fall migrant and winter visitor. The breeding range of Scott's Oriole in San Diego County corresponds closely with the narrow zone of desert-edge scrub and juniper woodland on the east slope of the mountains. Some localities that these orioles frequent are the juniper woodland between Banner and Scissors Crossing (two on 16 May 1964, G. McCaskie), Piñon Mountain Valley (two on 9 March 1980, D. Povey), Blair Valley (eggs on 20 May 1947, WF), La Puerta (= Mason) Valley (six juvenals in SD), and near In-ko-pah in extreme southwestern Imperial County (four on 18 March 1978, G. McCaskie). A few birds may breed locally or

MAP 124. Breeding Distribution of Scott's Oriole (*Icterus parisorum*)MAP 125. Breeding Distribution of Hooded Oriole (*Icterus cucullatus*)

sporadically around springs at lower elevations in the Anza-Borrego Desert: Middle Willows in Coyote Creek Canyon, 18 May 1974; Borrego Palm Canyon, 17 and 23 June 1973; Mortero Palms, nesting on 25 April 1973 (ABDSP file); Yaqui Well, pair on 18 May 1968 (G. McCaskie). Specimens from Oak Grove (2 May 1889, SD 804) and Campo (26–27 March 1877, SD 801–802, seven collected in 1882; also seen in May 1884, Belding 1890) may indicate former or sporadic breeding in the eastern foothill zone.

Spring migrants arrive in the Anza-Borrego Desert in mid or late March, with an earliest recorded date of 9 March (1980, at Piñon Mountain Valley, cited above; also 1974, three at Borrego Palm Canyon, G. McCaskie). Migrating individuals may be seen in non-breeding habitats such as desert wash or creosote bush scrub at least to early April and probably later; it is not yet known how late Scott's Orioles continue their migration. There are three fall and winter reports from the Anza-Borrego Desert: one at Agua Caliente Springs on 11 November 1968 (AFN 23:112, 1969), three at Borrego Palm Canyon on 11 November 1978 (AB 33:217, 1979), and one at Mountain Palm Springs on 11 January and 20 February 1974 (ABDSP file).

In the coastal lowland, the species is a very rare migrant and winter visitor, mostly to parks and residential areas, and particularly to flowering eucalyptus trees. E. Beemer has noted it at Pauma Valley on numerous occasions from 1947 through 1978, usually in winter or early spring, but as late as mid-May in 1973, 1975, and 1977, and from 3 to 14 July 1975. Observations of five near Miramar on 7 June 1979 (C. Edwards), and seven at Escondido on 24 January 1981 (AB 35:337, 1981) are exceptional. Otherwise, there have been only scattered reports of one or two individuals since 1920, between 7 September (1974, one at Point Loma, G. McCaskie) to 18 May (1934, La Jolla, SD 19077).

Scott's Orioles were apparently more numerous before 1920, occurring at least sporadically in the San Diego area in late spring and summer: two males at Balboa Park, April – 2 June 1901 (Stephens 1901), male and female together at San Diego, late April 1906 (K. Stephens 1906), one male at San Diego, 29 May 1914 (Grey 1915), and one male at Balboa Park, 2 September 1914 (Stephens 1915). Browne (1891) recorded a pair with a nest in Telegraph Canyon near Chula Vista on 16 May 1890.

HOODED ORIOLE

Icterus cucullatus nelsoni Swainson

Fairly common spring migrant and summer resident, uncommon fall migrant, very rare winter visitor. Few species of birds have adapted so thoroughly to the urbanization of southern California as has the Hooded Oriole. Residential neighborhoods and parks now constitute its preferred habitat, with orchards and trees around rural dwellings being inhabited by smaller numbers. Originally, the coastal population occurred in groves of sycamores, but now it

seldom if ever nests in that habitat. The birds have an overwhelming preference for fan palms as nest sites, the bag-like nests being built of fibers stripped from the leaves and attached to the underside of the leaves. Use of banana plants, acacias, and eucalyptus has also been noted. Hooded Orioles occur in two regions of the county: the coastal lowland and Anza-Borrego Desert. Definite localities for the coastal region extend as far inland as Capitán Grande Indian Reservation (WF), but Cooper (1874) reported the species to 610 m (2000 feet), and Stephens (1919a), to about 910 m (3000 feet). In the Anza-Borrego Desert, Hooded Orioles nest in the native fan palm (*Washingtonia filifera*) which grows around springs. A few probably breed at Jacumba, where J. Dunn saw three on 13 July 1974. Egg dates (42): 21 April – 4 August.

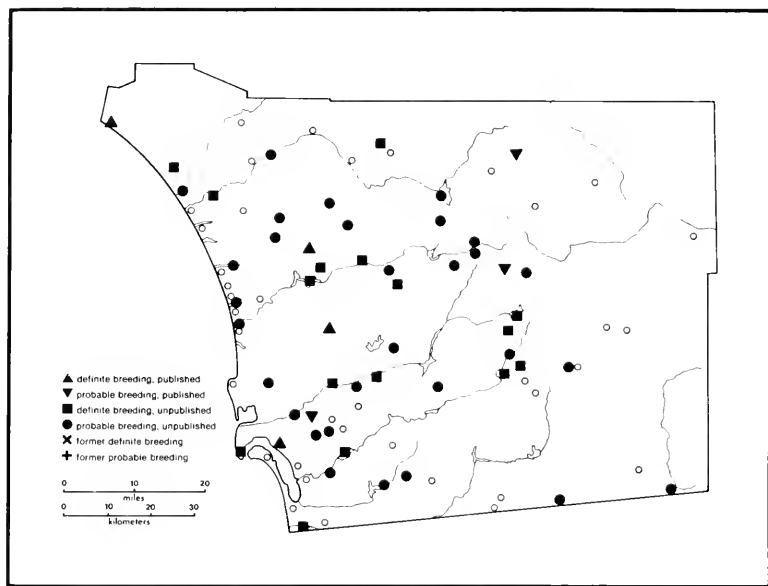
The earliest spring migrants arrive often in early March, and very rarely in late February (earliest records, 26 February 1971, one at Valley Center, AB 25:630, 1971; 27 February 1981, one at Imperial Beach, G. McCaskie), but they do not arrive in numbers until late March. In fall, most Hooded Orioles leave in early September; a few, mostly if not all immatures, occur as late as mid-October (12 October 1962, one in the Tijuana River Valley, G. McCaskie), and there is one report for late October (23 October 1976, one at the same locality, L. Delaney). Hooded Orioles have been reported about a dozen times in the San Diego area in winter. Usually single individuals are noted, often at sugar-water feeders, but five were at Point Loma during the winter of 1963–1964 (AFN 18:289, 1964). A specimen was collected in San Diego on 30 November 1956 (SD 30053).

Subspecies: *I. c. nelsoni* Ridgway, which breeds in California, northern Baja California, Arizona, and Sonora. The name *californicus* (Lessson) has been used for the coastal population, but Phillips et al. (1964) showed that California and Arizona birds form a single race, and that *californicus* is not racially identifiable.

ORCHARD ORIOLE

Icterus spurius spurius (Linnaeus)

Very rare fall vagrant, casual in winter, accidental in spring. About 24 Orchard Orioles have been reported in fall, all at Point Loma or in the Tijuana River Valley, except two at Solana Beach (26–28 October 1962, AFN 17:71, 1963; 27 October – 3 November 1973, AB 28:110, 1974) and one at San Diego (28 August 1966, AFN 21:80, 1967). The species has been found at least once during most fall seasons, with a maximum of five in 1964 (AFN 19:81, 1965). Recorded occurrences span the period 28 August (1966, one at San Diego, cited above) to 5 November (1964, one in the Tijuana River Valley, AFN 19:81, 1965), with an exceptionally late bird at Point Loma on 6 December 1964 (AFN 19:417, 1965). The single specimen for the county is an adult male taken in the Tijuana River Valley on 19 October 1962 (McCaskie and Banks 1964, SD 30472).

MAP 126. Breeding Distribution of Northern Oriole (*Icterus galbula*)

Orchard Orioles have been reported four times in winter: one at San Diego, "several times" during March 1958, including 30 March (Johnson 1959); two at Point Loma, mid-February – 31 March 1964 (AFN 18:389, 1964); one in East San Diego, 10 November – 25 March 1969 (AFN 23:112 and 523, 1969); and one in the Tijuana River Valley, 22 March 1980 (AB 34:816, 1980). The single spring observation is of one at Point Loma on 22 May 1980 (AB 34:817, 1980).

Female and immature Orchard Orioles look practically identical to juvenal Hooded Orioles, so the two species must be distinguished with great caution. The different call notes, "chuck" in Orchard, "yeek" in Hooded, are the best guide.

NORTHERN ORIOLE

Icterus galbula (Linnaeus) subsp.

Common spring migrant, fairly common summer resident, uncommon fall migrant, uncommon and very localized winter visitor. Northern Orioles prefer broad-leaved deciduous trees for nesting; thus riparian woodland, sycamore groves, and mixed woodland dominated by the black oak (*Quercus kelloggii*) constitute their principal breeding habitats. They use broad-leaved trees in parks and agricultural areas to a lesser extent. The summer range covers most of the coastal slope of the county extending east to Hot Springs Mountain (one on 22 July 1980), Banner (five on 6 May 1978), Mount Laguna (14 June 1977, P.

Unitt), and Jacumba (one on 13 July 1974, J. Dunn). Egg dates (28): 22 April – 18 June.

During spring migration, Northern Orioles may be seen in any kind of tree, and in the Anza-Borrego Desert as well as on the coastal slope. Migrants arrive in mid-March (earliest record, 9 March 1974, one at Agua Caliente Springs, AB 28:851, 1974), and soon become numerous, as indicated by 30 in Presidio Park on 30 March 1974 (J. Dunn). Most birds that continue north have passed through San Diego County by mid-May, but a late individual was at Point Loma, where the species does not breed, on 3 June 1974 (J. Dunn).

Post-breeding dispersal probably begins in early July, and most of the population has returned south by mid-September. A few scattered migrants occur in the coastal lowland until early November (one in the Tijuana River Valley on 1 November 1973, J. Dunn; one at San Elijo Lagoon on 8 November 1963, G. McCaskie).

In winter, Northern Orioles are noted in the coastal lowland in parks and affluent residential neighborhoods, very rarely in riparian woodland. They are found annually in the San Diego area, with up to five at Point Loma in the winter of 1963–1964 (AFN 18:389, 1964), four at Coronado on 20 December 1980 (R. Webster), and seven in Balboa Park on 15 December 1979 (L. Bevier; five Bullock's, two Baltimore). Reports outside of San Diego are from Lakeside (one on 15 February 1959, AFN 13:325,

1959), Leucadia (one on 31 December 1977, J. Butler), Carlsbad (one on 28 December 1980, L. Bevier), and San Luis Rey River Valley near Guajome Lake (one on 1 January and 31 December 1977, P. Unitt).

Subspecies: Two distinct subspecies groups of Northern Oriole occur in San Diego County. The *bullockii* group, Bullock's Oriole, is the group to which all the preceding account applies, except as specified. Van Rossem (1945) divided Bullock's Orioles into two races based on size: larger *I. g. bullockii* (Swainson) and smaller *I. g. parvus* van Rossem. *Parvus* breeds mainly in southern and coastal California; *bullockii* in the rest of the western United States. *Parvus* is the breeding subspecies in San Diego County, but some *bullockii* may pass through in migration. Four of the 26 local Bullock's Orioles in SD are just within the lower limits of size of *bullockii* listed by van Rossem, but possibly this represents the large extreme of normal variation within *parvus*. A juvenal male collected at San Luis Rey on 20 June 1962 (AMR 94), at this date undoubtedly a local bird, is so large (wing 97.9 mm, tail 76 mm) as to cast some doubt on the validity of the distinction between *bullockii* and *parvus*.

The birds breeding in eastern North America, west to central Alberta, Nebraska, and Oklahoma, are *I. g. galbula* (Linnaeus), the Baltimore Oriole. This race occurs in San Diego County as a rare fall migrant and winter visitor, and very rare spring migrant. The habitat requirements of Baltimore Oriole are the same as those of Bullock's; in winter the birds have been found only in parks and residential areas, especially around flowering eucalyptus trees. All

records are for the coastal lowland, and are all for the San Diego area, except one at Solana Beach on 2 January 1973 (AB 27:665, 1963), one at the same locality 25-29 September 1973 (AB 28:110, 1974), and one at Oceanside on 3 February 1979 (AB 33:316, 1979). Fall migrants are noted almost every year, with a maximum of nine in 1974 (AB 29:124, 1975), on dates extending from 17 September (1974, one in the Tijuana River Valley, G. McCaskie) to 14 November (1966, one at Point Loma, AFN 21:80, 1967). The two specimens for the county were both taken in fall: 10 October 1965, Tijuana River Valley, SD 35512, and 26 October 1974, Point Loma, SD 38981. One or two wintering Baltimore Orioles have been found annually since 1971, most often in Balboa Park. There are seven reports of spring migrants in the San Diego area between 31 March (1969, one at Presidio Park, AFN 23:627, 1969) and 22 April (1974, one at Old Mission Dam, AB 28:854, 1974), plus two late May observations at Point Loma: 27 May 1967 (AFN 21:542, 1967), and 26 May 1979 (AB 33:807, 1979).

STREAK-BACKED ORIOLE

Icterus pustulatus microstictus Griscom

Casual vagrant from western Mexico, with three records for fall and one for spring. The fall birds were all seen in the Tijuana River Valley: 22 September and 13 October 1962 (McCaskie and Banks 1964), and 8 October 1963 (AFN 18:76, 1964). The spring record is of an immature male collected at Murray Dam on 1 May 1931 (Huey 1931a, SD 14521).



Introduced Species

RING-NECKED PHEASANT

Phasianus colchicus Linnaeus

Apparently an uncommon and localized resident, but actual status obscurely known. It has not been reported as nesting in San Diego County, and Harold McKinney is unable to verify that it was ever purposefully introduced by the California Department of Fish and Game. Possibly pheasants persist only by release or escape from private game bird breeders. K. Weaver reports the species from the Escondido, Lake Hodges, and San Pasqual areas. Pheasants are found annually on Oceanside-Vista-Carlsbad Christmas Bird Counts, with a maximum of 14 on 1 January 1979. They have been noted in several sections of the count circle, most frequently around San Marcos and Vista, Talone Lake, the San Luis Rey River Valley, and grassy hillsides southeast of Oceanside. Pheasants were also recorded sporadically on San Diego Christmas Bird Counts from 1955 to 1968.

WILD TURKEY

Meleagris gallopavo Linnaeus

McCaskie and Banks (1966) wrote that "birds of Texas origin have been introduced by the California Department of Fish and Game in the Corte Madera and Warner areas, where they are apparently established." Harold McKinney of the Fish and Game Department verifies that the species was introduced at Corte Madera Ranch in 1959, and believes that some birds still survive. The only definite recent observations are by W. T. Everett, who saw one at Corte Madera Mountain in the fall of 1973 and by M. Evans who saw another in the same location in June of 1982. Linda Belluomini reported that three males and seven females were released in Camp Pendleton in 1978 (pers. comm. to Alice Fries).

DOMESTIC PIGEON or ROCK DOVE

Columba livia Gmelin

Abundant resident in cities, and around buildings in rural areas. Domestic Pigeons are closely associated with man-made structures, though flocks may occasionally be seen around cliffs or old quarries some distance from permanent human activity. No information is available on the history of the establishment of this bird as a feral breeding species in San Diego County.

SPOTTED DOVE

Streptopelia chinensis chinensis (Scopoli)

Uncommon resident of residential areas and parks in the coastal lowland. Spotted Doves were established in Los Angeles by 1917, and spread south to San Diego probably in the 1940s or early 1950s; the first published report is of seven on the San Diego Christmas Bird Count, 26 December 1954 (AFN 9:228 1955), when the species was stated to be "well established." At present, the population size seems stabilized at a low level, although there is no apparent reason why the species should not become common, as it has in Los Angeles and Orange counties. It is a bit more numerous around Oceanside than in the San Diego area, with up to 27 recorded on the Oceanside Christmas Bird Count, 31 December 1977 (AB 32:875, 1978).

EUROPEAN STARLING

Sturnus vulgaris vulgaris Linnaeus

Abundant resident. Starlings occur throughout the county in man-made habitats, where they often forage on lawns and in agricultural fields. They require cavities for nesting, placing their nests frequently in crevices of buildings or among the leaf bases of palm trees. They also favor holes in native trees such as cottonwoods or sycamores, and often breed in woodland habitats quite some distance from civilization.

Starlings were originally introduced from Britain to New York City in 1890. From there they spread throughout the United States, first reaching California in Siskiyou County in January 1942 (Jewett 1942). The first reports of Starlings in San Diego County are of a flock of about 25 at Julian "in the winter of 1948 or 1949" (M. Burns in Banks 1965), "some" at the same locality in early October 1951 (AFN 6:39, 1952), and two in downtown San Diego on 4 February 1959 (Stott 1959b). Nesting was first recorded in 1959, with three at Santee on 8 May (AFN 13:402, 1959), and a chick collected at San Onofre on 14 May (Banks 1965, SD 30157). Banks presented further data to indicate that Starlings arrived in large numbers in 1962. He believed that this information did not "reflect the situation accurately," and that "there were large wintering populations in the mid-1950s which were overlooked or not recorded." However, A. M. Rea found no starlings while he was active at San Luis Rey from 1958 to August 1963. Numbers in San Diego Christmas Bird Counts show a population explosion during the 1960s: 153 in 1963, 974 in 1964, 1500

in 1965, 4448 in 1968, and 7928 in 1969. During the 1970s the rate of increase probably slowed considerably, and Christmas Bird Count figures suggest a stabilized winter population in the San Diego area.

HOUSE SPARROW

Passer domesticus domesticus (Linnaeus)

Abundant resident. House Sparrows are intimately associated with "European" civilization, occurring throughout the county in urban, residential, and agricultural areas. They seldom stray far from man-made habitats, and are especially attached to buildings, in the crevices of which their nests are usually placed. Occasionally they make bulky ball-shaped nests in trees. Egg dates (8): 20 March - 5 May;

minimal further investigation would undoubtedly expand this period considerably.

The House Sparrow reached San Diego County by spreading south from northern California, after being transplanted from the eastern United States to San Francisco in 1871 or 1872. It was first reported at San Diego in November 1913 (Grinnell 1915), and was still not numerous in 1919, when Stephens (1919a) wrote "this pest has appeared in San Diego in but small numbers yet, and if persistently hunted it can be kept in check." By 1933, the House Sparrow was an "abundant resident throughout lowland and foothill regions" of southern California (Willett 1933). At present, its population is probably stabilized for the amount of available habitat, but may be expected to increase with the continuing urban development of San Diego County.

Species Erroneously or Inadequately Reported from San Diego County

Cape Petrel *Daption capense* (Linnaeus). The report of one near San Clemente Island on 3 September 1965 (AFN 20:91, 1966) needs more details; there is only one well-substantiated record of this southern hemisphere species in California.

Harcourt's Storm-petrel *Oceanodroma castro* (Harcourt). One reported 25 miles west of San Diego on 12 September 1970 (Winter and McCaskie 1975) awaits publication of full details.

Least Grebe *Tachybaptus dominicus* (Linnaeus). Stott and Selsor (1960) reported seeing one in the San Diego River mouth flood control channel on 20 December 1959. This unique report from coastal California may well be doubted, however, since its authors claim to be familiar with Least Grebes on the Colorado River, where there is in fact only one documented record of the species.

Brown Booby *Sula leucogaster* (Boddaert). The report of one off San Diego on 5 December 1959 (AFN 14:341, 1960) lacks details, and persons unfamiliar with boobies frequently misidentify them.

Red-breasted Goose *Branta ruficollis* (Pallas). One collected at Carlsbad on 18 September 1960 (Huey 1961a, SD) had probably escaped from captivity. No evidence suggests that this west Siberian breeding bird ever reaches North America as a genuine vagrant.

Chukar Partridge *Alectoris chukar* (Gray). Sams and Stott (1959) reported that Chukars had been "introduced in Borrego Valley" and were "sometimes seen about public campgrounds according to Mr. J. S. Roux." However, this species has never been reliably reported from the Anza-Borrego Desert State Park, according to Mark Jorgensen, park naturalist. The only habitat in San Diego County suitable for this Old World partridge is the steep, rocky slopes of the desert-edge zone, where if Chukars were present, they would certainly have been noticed during the annual bighorn sheep counts.

Eskimo Curlew *Numenius borealis* (Forster). Holterhoff (1884b) reported collecting one at San Diego in September 1883, but this record was discredited by Belding (1892b).

Black-tailed Gull *Larus crassirostris* Vieillot. Monroe (1955) collected one at the Naval Training Center on San

Diego Bay on 28 November 1954, but it seems more likely that this Japanese bird was transported across the Pacific on a ship, than that it was a naturally occurring vagrant.

Swallow-tailed Gull *Larus fuscatus* Neboux. Anthony (1895b) reported seeing three on 12 April 1895 just outside San Diego Bay, and one on 14 April 1895 halfway between Los Coronados Islands and Point Loma. Since there is no verified occurrence of this species far from the Galapagos Islands, it is certain Anthony misidentified some other species of black-headed gull.

Gull-billed Tern *Sterna nilotica* Gmelin. The report of two at the south end of San Diego Bay on 5 June 1955 (AFN 9:360, 1955) is unsubstantiated. The species has never been documented to occur in California away from the Salton Sea.

Ringed Turtle Dove *Streptopelia "risoria"* (Linnaeus). McCaskie and Banks (1966) reported this domesticated bird to be "resident in very limited numbers. Birds occasionally seen around San Diego may well be escaped cagebirds, but the species has become naturalized in a wild state about Los Angeles." Nothing indicates this dove has ever perpetuated itself in the wild in San Diego County.

Snowy Owl *Nyctea scandiaca* (Linnaeus). Taylor (1897) wrote "Mr. Gillette, of Chula Vista, San Diego County, informs us he saw one there about the same time [early December 1896]." This hearsay report has been deservedly ignored for many years.

Gila Woodpecker *Melanerpes uropygialis* (Baird). Gardner (1959) reported seeing one near Jacumba on 17 October 1952. This record, based on a recollection several years old, may be questioned in light of the absence of documented occurrences of the species west of its breeding range in the Imperial Valley.

Acadian Flycatcher *Empidonax vireescens* (Vieillot). One reported at Point Loma on 27 September 1980 was identified by "large size and broad bill, combined with crisp green upperparts, clean yellow belly and white throat" (AB 35:227, 1981). More conclusive documentation, preferably a specimen, is warranted for this species which has never been definitely recorded in California.

Yellow-billed Magpie *Pica nuttalli* (Audubon). Heermann

(1859) listed a specimen collected by J. F. Hammond at San Diego. If the locality was reported correctly, the bird must have been an escapee from captivity. This sedentary species has never been resident closer to San Diego County than the Conejo Valley on the Ventura/Los Angeles County line.

Curve-billed Thrasher *Toxostoma curvirostre* (Swainson).

One reported in the Tijuana River Valley on 6 and 19 September 1965 (AFN 20:92, 1966) may have been a misidentified Bendire's Thrasher.

Northern Cardinal *Cardinalis cardinalis* (Linnaeus). All records of this species in San Diego County (Gander 1927c, McCaskie and Banks 1966) undoubtedly are of escaped cage birds.

Addendum

The following new information was accumulated from 1 January 1982 to 31 December 1983. Space limitations permit only a few of the discoveries made during this period to be mentioned here. Outstanding among the many omitted are Roger Higson's observations of migrating water birds stopping at Lake Henshaw during spring storms. These observations suggest that Lake Henshaw lies along the main migration route from the Gulf of California to the Pacific coast. For more details on these unprecedented high numbers for an inland location of Red-throated and Common Loons, Horned Grebe, Brant, and Surf Scoter, and first inland records of Black and White-winged Scoter, see AB 36:893, 1982 and AB 37:911-912, 1983.

LAYSAN ALBATROSS

Diomedea immutabilis Rothschild

Linda Belluomini found one dead on the beach just north of the Santa Margarita River mouth on 31 March 1983, the first valid record for San Diego County. The skeleton, the tail, one wing, and part of the skin are preserved as SD 42196. A Laysan Albatross was supposedly found dead at the south end of Blair Valley in the Anza-Borrego Desert on 28 May 1982 (AB 36:893, 1982). No remains were preserved, so the report is unsubstantiated.

SHORT-TAILED SHEARWATER

Puffinus tenuirostris

An influx of this species in November and December 1983 rivaled that of 1941-1942.

RED-BILLED TROPICBIRD

Phaethon aethereus

Ruth Stalnaker found a second county specimen dead on the beach at Coronado on 21 September 1983 (SD 42568).

LITTLE BLUE HERON

Egretta caerulea

In both 1982 and 1983 a pair, resident throughout the year, nested and fledged young in the Tijuana River Valley Snowy and Cattle Egret colony (G. McCaskie).

YELLOW-CROWNED NIGHT HERON

Nycticorax violaceus

An adult occurred intermittently at San Elijo Lagoon from 25 October 1981 through August 1983 (T. Meyer and many other observers). Another adult was in a Black-crowned Night

Heron nesting colony (previously unreported) at Scripps Institution of Oceanography, La Jolla, from 23 May to 1 June 1983 (Michael Ritzwaller, photographed by J. Oldenettel).

AMERICAN BITTERN

Botaurus lentiginosus

This species was reported more frequently in the summers of 1982 and 1983 than in previous summers. Jerry Oldenettel noted one carrying nest material at Border Field State Park on 26 June 1983, the first definite suggestion of American Bittern nesting in San Diego County.

MISSISSIPPI KITE

Ictinia mississippiensis (Wilson)

Expanding its range, this species first reached San Diego County in 1982. One immature was in the Tijuana River Valley on 18 July 1982 (G. McCaskie) and an adult was at the same locality on 5 June 1983 (D. Parker). Another adult was at Pio Pico Park 7 km west of Dulzura from 12 June to 28 July 1983 (D. Povey). The third record was documented with photographs.

ZONE-TAILED HAWK

Buteo albonotatus

Roger Higson saw single individuals at Palomar Mountain on 28 February 1982 and from 26 February to 7 March 1983. Up to two birds were seen between Vista and Fallbrook between 29 October 1982 and 27 February 1983 (Willard Johnson, Tom Scott).

RED-TAILED HAWK

Buteo jamaicensis

A road-killed female (SD 42287) found at Oceanside on 29 April 1983 was identified by A. M. Rea as intermediate between *B. j. calurus* and *B. j. fuertesi*. This specimen has more rust color on the underparts than typical *fuertesi*, but is too pale on the tail and head for typical *calurus*. With four ruptured follicles and a brood patch, it represents the local breeding population.

MERLIN

Falco columbarius suckleyi Ridgway

One seen by Richard Webster at Lake Henshaw on 6 October 1982 was reported as this blackish race, not yet documented in San Diego County by a specimen.

ROSS' GOOSE*Anser rossii*

An unprecedented influx of this species during the winter of 1982-1983 brought 14 individuals to San Diego County, almost as many as known from all previous years combined (AB 37:337, 1983).

KING EIDER*Somateria spectabilis* (Linnaeus)

One adult male discovered at the Imperial Beach pier on 3 December 1982 later moved to Glorietta Bay, Coronado, where it remained until 25 January 1983. The record is documented by many excellent photographs and is a first for San Diego County. Seven King Eiders, more than in any previous year, are known to have reached California during the winter of 1982-1983.

HARLEQUIN DUCK*Histrionicus histrionicus*

The male found at Agua Hedionda Lagoon on 31 December 1977 was last reported on 28 February 1983 (J. Oldenettel). Another was at Coronado Cays on the Silver Strand on 5 October 1983 (Alayne MacMillan).

BLACK RAIL*Laterallus jamaicensis*

One was seen at San Elijo Lagoon on 21 February 1983 (L. Santaella) and another was heard in the San Felipe Valley 6.5 km southeast of San Felipe on 19 December 1983 (P. Unitt).

BLACK OYSTERCATCHER*Haematopus (ostralegus) bachmani*

Single birds were reported from Imperial Beach on 1 May 1982 (E. A. Cardiff) and 13 June 1982 (D. Parker) and from La Jolla 26 October-11 November 1982 (Ethel Barron). Two individuals continued to be seen intermittently at Point Loma from September (12 September 1983, L. C. Binford) through April.

RUFF*Philomachus pugnax*

An additional five fall records include an exceptionally early adult male seen along the Silver Strand on 26 June 1983 (G. McCaskie).

RED PHALAROPE*Phalaropus fulicarius*

Storms brought unprecedented numbers inland on 11 November 1982: over 100 at Lake Hodges (K. Weaver) and 60 at Lake Henshaw (G. McCaskie).

SPOTTED SANDPIPER*Tringa macularia*

During the summer of 1982, three pairs remained at San Elijo Lagoon, and Dennis Parker saw two of their young on 6 June. David King noted seven individuals there on 5 June 1983. A pair bred again at Lake Hodges; Elizabeth Copper saw one of their young on 25 July 1982.

ROYAL TERN*Sterna maxima*

Richard E. Webster observed a pair with a partly grown chick in the Elegant Tern colony at the south end of San Diego Bay on 18 June 1982. He had seen the birds incubating or brooding since 27 May, and suspected as many as three other pairs of Royal Terns may have been nesting.

SANDWICH TERN*Sterna sandvicensis*

One seen intermittently around San Diego Bay from 15 May to 13 June 1982 was possibly the same individual seen at the south end of the bay from 9 to 20 May 1980 (Schaffner, F. A. Sandwich Tern in California, Western Birds 12:181-182, 1981; AB 36:894 and 1016, 1982).

SOOTY TERN*Sterna fuscata* Linnaeus

An immature was reportedly seen at the San Diego River mouth on 27 September 1982 (AB 37:224, 1983). However, this species has such extremely pelagic habits while not breeding, and its normal, tropical range is so far from San Diego, that I do not consider this sight record by a single observer enough to add Sooty Tern to the county (or California) list.

LONG-EARED OWL*Asio otus*

A downy young seen in the Tijuana River Valley on 13 June 1982 (E. Copper) indicates the first breeding known on the coastal slope since 1973.

BLACK SWIFT*Cypseloides niger*

Seven reports in 1982 and 1983 continued the trend of more frequent Black Swift occurrences that began in 1980. These include three in the fall of 1982: 10 at Point Loma on 19 September (C. Edwards), three at the same place on 9 October (F. Dexter), and two at Palomar Mountain on 7 October (R. Higson).

CHIMNEY SWIFT*Chaetura pelagica*

Two additional records: eight seen in downtown San Diego on 11 July 1982 (E. Copper), and up to six at Los

Peñasquitos Lagoon from 7 to 12 June 1983 (D. Delaney). Chimney Swift is gradually increasing as a summer visitor to California.

BELTED KINGFISHER

Ceryle alcyon

Three reports of definite or probable breeding in the summer of 1983: a fledgling found dead (specimen not saved) in the San Luis Rey River at the San Luis Rey Day Use Area 3 km northwest of the Lake Henshaw Dam on 2 July 1983 (R. Higson); an adult seen carrying a fish and a probable kingfisher nest hole seen in a bank 1 km east of Old Mission Dam on 12 June (C. Edwards); a pair with two fledglings in the San Pasqual Valley on 30 May (K. Weaver).

LEWIS' WOODPECKER

Melanerpes lewis

An invasion in the winter of 1982-1983 brought a maximum of 60 to Palomar Mountain on 26 October 1982, and two remained there as late as 28 May 1983 (R. Higson).

OLIVE-SIDED FLYCATCHER

Contopus borealis

Nested for the first time known along the coast, raising two young at San Elijo Lagoon 2 May - 5 July 1982 (T. Meyer).

SAY'S PHOEBE

Sayornis saya

Five lowland summer observations include a pair nesting in south Escondido on 5 June 1982 and 5-20 June 1983 (K. Weaver). Perhaps Say's Phoebe always has been a regular, though rare nesting species in the coastal lowland, simply overlooked or ignored in recent years.

GREAT CRESTED FLYCATCHER

Myiarchus crinitus

A fourth sight record for San Diego County: one at Point Loma on 20 September 1983 (R. Webster).

SULPHUR-BELLIED FLYCATCHER

Myiodynastes luteiventris

A second county record: one seen at Point Loma 16-20 September 1983 (R. Webster).

WHITE-EYED VIREO

Vireo griseus (Boddaert)

A first county record: one seen at Point Loma on 7 June 1982 (R. Webster, many other observers).

BROWN CREEPER

Certhia familiaris montana Ridgway

A specimen (SD 42261, P. Unitt) collected at Filaree Flat, 7 km northwest of Mount Laguna on 1 November 1983, is this Rocky Mountain race, which differs from *C. f. zelotes* breeding in California by its broader, whiter back streaks and paler tawny (not dark cinnamon) rump. This is the first *C. f. montana* identified from San Diego County, but it is also the first fall or winter specimen, so more specimens are needed to determine the extent of *montana* occurrence here.

GRAY CATBIRD

Dumetella carolinensis

A fifth county record: one seen at Point Loma from 7 November through December 1983 (R. Webster, many other observers).

WOOD THRUSH

Hylocichla mustelina

A fourth county record: one seen at Point Loma 1-25 November 1982 (David and Nancy Kelly, many other observers).

RED-FACED WARBLER

Cardellina rubrifrons

A third county record: one seen and photographed at Point Loma 11-12 September 1982 (R. Webster, many other observers).

KENTUCKY WARBLER

Geothlypis formosa

A third county record: one seen at Del Mar 14-16 November 1983 (D. Delaney, many other observers).

SAGE SPARROW

Aimophila belli canescens (Grinnell)

One adult female found dead at the Borrego Airport on 8 January 1982 (SD 42234) was examined and measured by A. M. Rea. With wing chords 66.5 and 67.5 mm, and tail 68.3 mm it represents the smaller of the two pale races and is a first record for San Diego County.

GREAT-TAILED GRACKLE

Quiscalus mexicanus

Four additional records reflect the continuing expansion of this species into California: in the Tijuana River Valley on 13 February 1983 (Marjorie and Don Hastings), on 16 April 1983 (J. Oldenettel), and from 17 November 1983 (two birds on 24 November, E. Copper) to 17 December 1983, and at Santee Lakes from 15 November 1982 through December 1983 (D. and N. Kelly, C. Edwards).

LIST OF SPECIES

Each species positively known from San Diego County is listed below by English and scientific name. Subspecies are listed separately under the species if more than one occurs in San Diego County. English names are attached only to those subspecies or subspecies-groups that are easily identifiable in the field. If the species has not been collected in the county, and the subspecies is presumed on geographic probability only, the subspecific name is placed in brackets. The first column of symbols on the right indicates breeding status in the county. Regular breeders at present are indicated by "b"; former regular breeders, now extirpated, are indicated by "x"; occasional breeders are indicated by "o". No symbol indicates non-breeders.

The second column shows how the species' occurrence in the county has been documented. If a specimen has been collected, this is indicated by "sp". If the specimen is in the San Diego Natural History Museum, no further symbol follows. If the specimen is in some other museum, its location is indicated with the museum's abbreviation. In a few cases, I have not traced specimen's present location. In these instances, the published reference reporting the specimen is given. Some species have not been collected in the county, but photographs of them have been published or deposited in the San Diego Natural History Museum. These are indicated by "ph". Finally, some species are known only from sight records; these are indicated by "sr".

Family Diomedidae

Short-tailed Albatross	<i>Diomedea albatrus</i>	sp
Black-footed Albatross	<i>Diomedea nigripes</i>	sp

Family Procellariidae

Northern Fulmar	<i>Fulmarus glacialis rogersii</i>	sp
New Zealand Shearwater	<i>Puffinus bulleri</i>	sp
Pale-footed Shearwater	<i>Puffinus carneipes</i>	sp SBCM
Pink-footed Shearwater	<i>Puffinus creatopus</i>	sp
Sooty Shearwater	<i>Puffinus griseus</i>	sp
Short-tailed Shearwater	<i>Puffinus tenuirostris</i>	sp
Black-vented Shearwater	<i>Puffinus (puffinus) opisthomelas</i>	sp

Family Hydrobatidae

Wilson's Storm-petrel	<i>Oceanites oceanicus</i> subsp?	sp MVZ
Least Storm-petrel	<i>Halocptena microsoma</i>	sp
Leach's Storm-petrel	<i>Oceanodroma leucorhoa socorroensis</i>	sp
Black Storm-petrel	<i>Oceanodroma melania</i>	sp
Ashy Storm-petrel	<i>Oceanodroma homochroa</i>	sp
Fork-tailed Storm-petrel	<i>Oceanodroma furcata plumbea</i>	sp

Family Gaviidae

Red-throated Loon	<i>Gavia stellata</i>	sp
Arctic Loon	<i>Gavia (arctica) pacifica</i>	sp
Common Loon	<i>Gavia immer</i>	sp

Family Podicipedidae

Pied-billed Grebe	<i>Podilymbus podiceps podiceps</i>	b sp
Horned Grebe	<i>Podiceps auritus cornutus</i>	sp
Red-necked Grebe	<i>Podiceps grisegena [holboellii]</i>	sr
Eared Grebe	<i>Podiceps nigricollis californicus</i>	o sp
Western Grebe	<i>Aechmophorus occidentalis</i>	b sp

Family Phaethontidae

Red-billed Tropicbird *Phaethon aethereus mesonauta* sp

Family Frigateidae

Magnificent Frigatebird *Fregata magnificens* sp

Family Phalacrocoracidae

Double-crested Cormorant *Phalacrocorax auritus albociliatus* x sp

Brandt's Cormorant *Phalacrocorax penicillatus* o sp

Pelagic Cormorant *Phalacrocorax pelagicus resplendens* sp

Anhinga *Anhinga anhinga* [leucogaster] ph

Family Sulidae

Blue-footed Booby *Sula nebouxii nebouxii* sp

Blue-faced Booby *Sula dactylatra* subsp.? sr

Family Pelecanidae

American White Pelican *Pelecanus erythrorhynchos* sp

Brown Pelican *Pelecanus occidentalis californicus* sp

Family Ardeidae

Great Blue Heron *Ardea herodias herodias* b sp

Great Egret *Ardea alba egretta* sp

Reddish Egret *Egretta rufescens* subsp.? sp

Louisiana Heron *Egretta tricolor ruficollis* b sp

Cattle Egret *Egretta ibis ibis* b sp

Little Blue Heron *Egretta caerulea* b sp SBCM

Snowy Egret *Egretta thula thula* b sp

Green Heron *Ardeola striata anthonyi* b sp

Yellow-crowned Night Heron *Nycticorax violaceus bancrofti* sp

Black-crowned Night Heron *Nycticorax nycticorax hoactli* b sp

Least Bittern *Ixobrychus exilis hesperis* b sp

American Bittern *Botaurus lentiginosus* sp

Family Ciconiidae

Wood Stork *Mycteria americana* sp

Family Threskiornithidae

White Ibis *Eudocimus albus* sp

White-faced Ibis *Plegadis chihi* o sp

Roseate Spoonbill *Platalea ajaja* sr

Family Cathartidae

Turkey Vulture *Cathartes aura* subsp.? b sp WF (eggs)

California Condor *Gymnogyps californianus* x sp

Family Accipitridae

Osprey *Pandion haliaetus carolinensis* o sp

White-tailed Kite *Elanus leucurus majusculus* b sp

Bald Eagle *Haliaeetus leucocephalus* subsp.

H. l. leucocephalus

H. l. alascanus

o sp WF (eggs)

sp MVZ

Northern Harrier *Circus cyaneus hudsonius* b sp

Sharp-shinned Hawk *Accipiter striatus velox* sp

Cooper's Hawk *Accipiter cooperii* b sp

Northern Goshawk *Accipiter gentilis atricapillus* sp

Harris' Hawk	<i>Parabuteo unicinctus superior</i>	sp
Red-shouldered Hawk	<i>Buteo lineatus elegans</i>	b sp
Broad-winged Hawk	<i>Buteo platypterus platypterus</i>	sp
Swainson's Hawk	<i>Buteo swainsoni</i>	x sp
Zone-tailed Hawk	<i>Buteo albonotatus</i>	sp
Red-tailed Hawk	<i>Buteo jamaicensis</i> subspp.	
	<i>B. j. calurus</i>	b sp
	<i>B. j. fuertesi</i>	sp
Ferruginous Hawk	<i>Buteo regalis</i>	sp
Rough-legged Hawk	<i>Buteo lagopus [sanctijohannis]</i>	sr
Golden Eagle	<i>Aquila chrysaetos canadensis</i>	b sp

Family Falconidae

American Kestrel	<i>Falco sparverius</i> subspp.	
	<i>F. s. sparverius</i>	b sp
	<i>F. s. peninsularis</i>	sp
Merlin	<i>Falco columbarius</i> subspp.	
	Western Merlin <i>F. c. bendirei</i>	sp
	Richardson's Merlin <i>F. c. richardsoni</i>	sp
Prairie Falcon	<i>Falco mexicanus</i>	b sp
Peregrine Falcon	<i>Falco peregrinus</i> subspp.	
	<i>F. p. anatum</i>	x sp
	<i>F. p. pealei</i>	sp CAS

Family Anatidae

Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>	x sp
Whistling Swan	<i>Cygnus columbianus columbianus</i>	sp
White-fronted Goose	<i>Anser albifrons frontalis</i>	sp
Snow Goose	<i>Anser caerulescens caerulescens</i>	sp
Ross' Goose	<i>Anser rossii</i>	sr
Canada Goose	<i>Branta canadensis</i> subspp.	
	Canada Goose group:	
	<i>B. c. mollitti</i>	sp
	<i>B. c. parvipes</i>	sp (Belding 1892)
	Cackling Goose <i>B. c. minima</i>	sr
Brant	<i>Branta bernicla</i>	
	Atlantic Brant <i>B. b. hrota</i>	sr
	Black Brant <i>B. b. nigricans</i>	sp
Wood Duck	<i>Aix sponsa</i>	sp
Eurasian Wigeon	<i>Anas penelope</i>	sr
American Wigeon	<i>Anas americana</i>	sp
Gadwall	<i>Anas strepera strepera</i>	b sp
Green-winged Teal	<i>Anas crecca</i> subspp.	
	Eurasian Teal <i>A. c. crecca</i>	sr
	Green-winged Teal <i>A. c. carolinensis</i>	o sp
Mallard	<i>Anas platyrhynchos platyrhynchos</i>	b sp
Northern Pintail	<i>Anas acuta acuta</i>	o sp
Blue-winged Teal	<i>Anas discors</i>	sp LACM
Cinnamon Teal	<i>Anas cyanoptera septentrionalium</i>	b sp
Northern Shoveler	<i>Anas clypeata</i>	o sp
Canvasback	<i>Aythya valisineria</i>	sp
Redhead	<i>Aythya americana</i>	b sp
Ring-necked Duck	<i>Aythya collaris</i>	sp
Greater Scaup	<i>Aythya marila [mariloides]</i>	sp

Lesser Scaup	<i>Aythya affinis</i>	sp
Harlequin Duck	<i>Histrionicus histrionicus</i>	sr
Oldsquaw	<i>Clangula hyemalis</i>	sp
Black Scoter	<i>Melanitta nigra americana</i>	sr
Surf Scoter	<i>Melanitta perspicillata</i>	sp
White-winged Scoter	<i>Melanitta fusca deglandi</i>	sp
Common Goldeneye	<i>Bucephala clangula americana</i>	sp
Barrow's Goldeneye	<i>Bucephala islandica</i>	sr
Bufflehead	<i>Bucephala albeola</i>	sp
Hooded Merganser	<i>Mergus cucullatus</i>	sp
Red-breasted Merganser	<i>Mergus serrator</i>	sp
Common Merganser	<i>Mergus merganser americanus</i>	sp
Ruddy Duck	<i>Oxyura jamaicensis rubida</i>	b sp

Family Phasianidae

California Quail	<i>Callipepla californica californica</i>	b sp
Gambel's Quail	<i>Callipepla gambelii gambelii</i>	b sp
Mountain Quail	<i>Callipepla picta eremophila</i>	b sp

Family Gruidae

Sandhill Crane	<i>Grus canadensis</i> subsp.?	sr
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Family Rallidae

Black Rail	<i>Laterallus jamaicensis coturniculus</i>	x sp
Clapper Rail	<i>Rallus longirostris levipes</i>	b sp
Virginia Rail	<i>Rallus limicola limicola</i>	b sp
Sora	<i>Porzana carolina</i>	o sp
Purple Gallinule	<i>Porphyrio martinicus</i>	sp
Common Gallinule	<i>Gallinula chloropus cachinnans</i>	b sp
American Coot	<i>Fulica americana americana</i>	b sp

Family Haematopodidae

American Oystercatcher	<i>Haematopus (ostralegus) palliatus frazari</i>	sp MVZ
Black Oystercatcher	<i>Haematopus (ostralegus) bachmani</i>	sp

Family Recurvirostridae

Black-necked Stilt	<i>Himantopus (himantopus) mexicanus mexicanus</i>	b sp
American Avocet	<i>Recurvirostra americana</i>	b sp

Family Charadriidae

Lesser Golden Plover	<i>Pluvialis dominica</i> subsp.	
American Golden Plover	<i>P. d. dominica</i>	sp
Pacific Golden Plover	<i>P. d. fulva</i>	sr
Black-bellied Plover	<i>Pluvialis squatarola</i>	sp
Mountain Plover	<i>Charadrius montanus</i>	sp
Killdeer	<i>Charadrius vociferus vociferus</i>	b sp
Wilson's Plover	<i>Charadrius wilsonia beldingi</i>	sp MVZ
Semipalmated Plover	<i>Charadrius semipalmatus</i>	sp
Snowy Plover	<i>Charadrius alexandrinus nivosus</i>	b sp

Family Scolopacidae

Ruddy Turnstone	<i>Arenaria interpres</i> subsp.?	sp
Black Turnstone	<i>Arenaria melanocephala</i>	sp
Surfbird	<i>Aphriza virgata</i>	sp
Red Knot	<i>Calidris canutus</i> subsp.?	sp
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	sp

Pectoral Sandpiper	<i>Calidris melanotos</i>	sp
Baird's Sandpiper	<i>Calidris bairdii</i>	sp (Bishop 1905)
Semipalmated Sandpiper	<i>Calidris pusilla</i>	ph
Western Sandpiper	<i>Calidris mauri</i>	sp
Rufous-necked Sandpiper	<i>Calidris ruficollis</i>	ph
Least Sandpiper	<i>Calidris minutilla</i>	sp
Curlew Sandpiper	<i>Calidris ferruginea</i>	ph
Dunlin	<i>Calidris alpina pacifica</i>	sp
Sanderling	<i>Calidris alba</i>	sp
Stilt Sandpiper	<i>Micropalama himantopus</i>	ph
Ruff	<i>Philomachus pugnax</i>	sp
Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>	ph
Wilson's Phalarope	<i>Phalaropus tricolor</i>	sp
Northern Phalarope	<i>Phalaropus lobatus</i>	sp
Red Phalarope	<i>Phalaropus fulicarius</i>	sp
Willet	<i>Catoptrophorus semipalmatus</i>	sp
Lesser Yellowlegs	<i>Tringa flavipes</i>	sp
Greater Yellowlegs	<i>Tringa melanoleuca</i>	sp
Solitary Sandpiper	<i>Tringa solitaria cinnamomea</i>	sp
Wandering Tattler	<i>Tringa incana</i>	sp
Spotted Sandpiper	<i>Tringa hypoleucos</i>	o sp
Whimbrel	<i>Numenius phaeopus hudsonicus</i>	sp
Long-billed Curlew	<i>Numenius americanus</i> subspp.	
	<i>N. a. americanus</i>	sp
	<i>N. a. parvus</i>	sp
Bar-tailed Godwit	<i>Limosa lapponica baueri</i>	ph
Marbled Godwit	<i>Limosa fedoa</i>	sp
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>	sp
Short-billed Dowitcher	<i>Limnodromus griseus</i> subspp.	
	<i>L. g. caurinus</i>	sp
	<i>L. g. hendersoni</i>	sp AMR
Common Snipe	<i>Gallinago gallinago delicata</i>	sp

Family Laridae

South Polar Skua	<i>Catharacta maccornicki</i>	sp CSULB
Pomarine Jaeger	<i>Stercorarius pomarinus</i>	sp
Parasitic Jaeger	<i>Stercorarius parasiticus</i>	sp
Long-tailed Jaeger	<i>Stercorarius longicaudus</i>	sp
Laughing Gull	<i>Larus atricilla</i>	ph
Franklin's Gull	<i>Larus pipixcan</i>	sp
Little Gull	<i>Larus minutus</i>	sp
Sabine's Gull	<i>Larus sabini</i>	sp
Bonaparte's Gull	<i>Larus philadelphia</i>	sp
Heermann's Gull	<i>Larus heermanni</i>	sp
Ring-billed Gull	<i>Larus delawarensis</i>	sp
Mew Gull	<i>Larus canus brachyrhynchus</i>	sp
California Gull	<i>Larus californicus</i>	sp
Herring Gull	<i>Larus argentatus smithsonianus</i>	sp
Glaucous-winged Gull	<i>Larus glaucescens</i>	sp
Western Gull	<i>Larus occidentalis</i> subspp.	
	<i>L. o. occidentalis</i>	sp
	<i>L. o. uymani</i>	b sp
Yellow-footed Gull	<i>Larus (occidentalis) livens</i>	sp
Thayer's Gull	<i>Larus thayeri</i>	sp

Glaucous Gull	<i>Larus hyperboreus burrorianus</i>	sp
Black-legged Kittiwake	<i>Rissa tridactyla pollicaris</i>	sp
Black Skimmer	<i>Rynchops niger niger</i>	b sp
Caspian Tern	<i>Sterna caspia</i>	b sp
Royal Tern	<i>Sterna maxima maxima</i>	sp
Sandwich Tern	<i>Sterna sandvicensis [acuflavida]</i>	sr
Elegant Tern	<i>Sterna elegans</i>	b sp
Common Tern	<i>Sterna hirundo hirundo</i>	sp
Arctic Tern	<i>Sterna paradisaea</i>	sp
Forster's Tern	<i>Sterna forsteri</i>	b sp
Least Tern	<i>Sterna (albifrons) antillarum browni</i>	b sp
Black Tern	<i>Chlidonias niger surinamensis</i>	sp

Family Alcidae

Common Murre	<i>Uria aalge californica</i>	sp
Pigeon Guillemot	<i>Cypphus columba [columba]</i>	sr
Marbled Murrelet	<i>Brachyramphus marmoratus [marmoratus]</i>	ph
Kittlitz's Murrelet	<i>Brachyramphus brevirostris</i>	sp
Xantus' Murrelet	<i>Endomychura hypoleuca</i> subspp.	
Guadalupe Xantus' Murrelet	<i>E. h. hypoleuca</i>	sp SBCM
Northern Xantus' Murrelet	<i>E. h. scrippsi</i>	sp
Craver's Murrelet	<i>Endomychura craveri</i>	sp
Ancient Murrelet	<i>Synthliboramphus antiquus</i>	sp
Cassin's Auklet	<i>Ptychoramphus aleuticus aleuticus</i>	sp
Parakeet Auklet	<i>Cyclorhynchus psittacula</i>	sp USNM
Rhinoceros Auklet	<i>Cerorhinca monocerata</i>	sp
Horned Puffin	<i>Fratercula corniculata</i>	sp
Tufted Puffin	<i>Lunda cirrhata</i>	sp

Family Columbidae

Band-tailed Pigeon	<i>Columba fasciata monilis</i>	b sp
Mourning Dove	<i>Zenaida macroura marginella</i>	b sp
White-winged Dove	<i>Zenaida asiatica mearnsi</i>	b sp
Common Ground Dove	<i>Columbina passerina pallescens</i>	b sp

Family Cuculidae

Yellow-billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	x sp
Greater Roadrunner	<i>Geococcyx californianus</i>	b sp

Family Tytonidae

Barn Owl	<i>Tyto alba pratincola</i>	b sp
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Family Strigidae

Flammulated Owl	<i>Otus flammeolus</i>	sp
Western Screech Owl	<i>Otus (asio) kennicottii cardonensis</i>	b sp
Great Horned Owl	<i>Bubo virginianus</i>	
	<i>B. v. pacificus</i>	b sp
	<i>B. v. pallescens</i>	b sp
Northern Pygmy Owl	<i>Glaucidium gnoma [californicum]</i>	b sr
Burrowing Owl	<i>Athene cunicularia hypugaea</i>	b sp
Spotted Owl	<i>Strix occidentalis occidentalis</i>	b sp
Long-eared Owl	<i>Asio otus wilsonianus</i>	b sp
Short-eared Owl	<i>Asio flammeus flammeus</i>	o sp
Saw-whet Owl	<i>Aegolius acadicus acadicus</i>	b sp

Family *Caprimulgidae*

Lesser Nighthawk	<i>Chordeiles acutipennis texensis</i>	b	sp
Common Nighthawk	<i>Chordeiles minor</i> subsp.?		sr
Poor-will	<i>Phalaenoptilus nuttallii</i> subsp.		
	<i>P. n. californicus</i>	b	sp
	<i>P. n. nuttallii</i>		sp
	<i>P. n. hucyi</i>		sp
Whip-poor-will	<i>Caprimulgus vociferus</i> subsp.?		ph

Family *Apodidae*

Black Swift	<i>Cypseloides niger borealis</i>	sp	MVZ
Chimney Swift	<i>Chaetura pelagica</i>		sp
Vaux's Swift	<i>Chaetura vauxi vauxi</i>		sp
White-throated Swift	<i>Aeronautes saxatalis</i>	b	sp

Family *Trochilidae*

Broad-billed Hummingbird	<i>Cyanthus latirostris</i> [magicus]		sr
Black-chinned Hummingbird	<i>Archilochus alexandri</i>	b	sp
Costa's Hummingbird	<i>Archilochus costae</i>	b	sp
Anna's Hummingbird	<i>Archilochus anna</i>	b	sp
Calliope Hummingbird	<i>Stellula calliope</i>		sp
Broad-tailed Hummingbird	<i>Selasphorus platycercus</i> [platycercus]		sr
Rufous Hummingbird	<i>Selasphorus rufus</i>		sp
Allen's Hummingbird	<i>Selasphorus sasin</i> subsp.		
	<i>S. s. sasin</i>		sp
	<i>S. s. sedentarius</i>		sp

Family *Alcedinidae*

Belted Kingfisher	<i>Ceryle alcyon</i>		o	sp
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Family *Picidae*

Lewis' Woodpecker	<i>Melanerpes lewis</i>		sp
Acorn Woodpecker	<i>Melanerpes formicivorus bairdi</i>	b	sp
Yellow-bellied Sapsucker	<i>Sphyrapicus (varius) varius</i>		sr
Red-naped Sapsucker	<i>Sphyrapicus (varius) nuchalis</i>		sp
Red-breasted Sapsucker	<i>Sphyrapicus (varius) ruber</i> subsp.		
	<i>S. (v.) r. ruber</i>		sp
	<i>S. (v.) r. daggetti</i>	b	sp
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i> subsp.?		sr
Ladder-backed Woodpecker	<i>Dendrocopos scalaris cactophilus</i>	b	sp
Nuttall's Woodpecker	<i>Dendrocopos nuttallii</i>	b	sp
Downy Woodpecker	<i>Dendrocopos pubescens turati</i>	b	sp
Hairy Woodpecker	<i>Dendrocopos villosus hyloscopus</i>	b	sp
White-headed Woodpecker	<i>Dendrocopos albolarvatus gravirostris</i>	b	sp
Common Flicker	<i>Colaptes auratus</i> subsp.		
	Yellow-shafted Flicker <i>C. a. luteus</i>		sp
	Red-shafted Flicker group:		
	<i>C. a. canescens</i>		sp
	<i>C. a. collaris</i>	b	sp

Family *Tyrannidae*

Olive-sided Flycatcher	<i>Contopus borealis</i>	b	sp
Greater Pewee	<i>Contopus fumigatus pertinax</i>		sr

Western Wood Pewee	<i>Contopus sordidulus</i> subsp.	
<i>C. s. veliei</i>		b sp
<i>C. s. saturatus</i>		sp
Willow Flycatcher	<i>Empidonax traillii</i> subsp.	
<i>E. t. brewsteri</i>		sp
<i>E. t. extimus</i>		b sp
Least Flycatcher	<i>Empidonax minimus</i>	sp
Hammond's Flycatcher	<i>Empidonax hammondi</i>	sp
Dusky Flycatcher	<i>Empidonax oberholseri</i>	o sp
Gray Flycatcher	<i>Empidonax wrightii</i>	sp
Western Flycatcher	<i>Empidonax difficilis</i> subsp.	
<i>E. d. difficilis</i>		b sp
<i>E. d. insulicola</i>		sp
<i>E. d. hellmayri</i>		sp
Eastern Phoebe	<i>Sayornis phoebe</i>	sr
Black Phoebe	<i>Sayornis nigricans semiatra</i>	b sp
Say's Phoebe	<i>Sayornis saya</i> subsp.	
<i>S. s. saya</i>		b sp
<i>S. s. quiescens</i>		sp
Vermilion Flycatcher	<i>Pyrocephalus rubinus flammeus</i>	o sp
Ash-throated Flycatcher	<i>Myiarchus cinerascens cinerascens</i>	b sp
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	sr
Sulphur-bellied Flycatcher	<i>Myiodynastes luteiventris</i>	sr
Tropical Kingbird	<i>Tyrannus melancholicus satrapa</i>	sp
Cassin's Kingbird	<i>Tyrannus vociferans vociferans</i>	b sp
Thick-billed Kingbird	<i>Tyrannus crassirostris</i>	ph
Western Kingbird	<i>Tyrannus verticalis</i>	b sp
Eastern Kingbird	<i>Tyrannus tyrannus</i>	sp
Scissor-tailed Flycatcher	<i>Tyrannus forficatus</i>	sp

Family Alaudidae

Horned Lark	<i>Eremophila alpestris</i> subsp.	
<i>E. a. actia</i>		b sp
<i>E. a. ammophila</i>		sp
<i>E. a. leucansiptila</i>		b sp
<i>E. a. insularis</i>		sp (Behle 1942)

Family Hirundinidae

Tree Swallow	<i>Tachycineta bicolor</i>	o sp
Violet-green Swallow	<i>Tachycineta thalassina lepidia</i>	b sp
Purple Martin	<i>Progne subis subis</i>	b sp
Rough-winged Swallow	<i>Stelgidopteryx ruficollis</i> subsp.	
<i>S. r. psammochrous</i>		b sp
<i>S. r. serripennis</i>		sp
Bank Swallow	<i>Riparia riparia riparia</i>	x sp
Barn Swallow	<i>Hirundo rustica erythrogaster</i>	b sp
Cliff Swallow	<i>Hirundo pyrrhonota tachina</i>	b sp

Family Corvidae

Piñon Jay	<i>Gymnorhinus cyanocephalus</i>	sp
Steller's Jay	<i>Cyanocitta stelleri frontalis</i>	b sp
Scrub Jay	<i>Aphelocoma coerulescens obscura</i>	b sp
Clark's Nutcracker	<i>Nucifraga columbiana</i>	sp
American Crow	<i>Corvus brachyrhynchos hesperis</i>	b sp
Common Raven	<i>Corvus corax clarionensis</i>	b sp

Family Laniidae

Loggerhead Shrike	<i>Lanius ludovicianus</i> subsp.	
California Shrike	<i>L. l. gambeli</i>	b sp
White-rumped Shrike	<i>L. l. excubitorides</i>	b sp

Family Vireonidae

Hutton's Vireo	<i>Vireo huttoni huttoni</i>	b sp
Bell's Vireo	<i>Vireo bellii pusillus</i>	b sp
Gray Vireo	<i>Vireo vicinior</i>	b sp
Solitary Vireo	<i>Vireo solitarius</i> subsp.	
Cassin's Vireo	<i>V. s. cassinii</i>	b sp
Plumbeous Vireo	<i>V. s. plumbeus</i>	sr
Blue-headed Vireo	<i>V. s. solitarius</i>	sr
Warbling Vireo	<i>Vireo gilvus swainsonii</i>	b sp
Philadelphia Vireo	<i>Vireo philadelphicus</i>	sp
Red-eyed Vireo	<i>Vireo (olivaceus) olivaceus</i>	sp
Yellow-green Vireo	<i>Vireo (olivaceus) flavoviridis</i>	sp

Family Paridae

Mountain Chickadee	<i>Parus gambeli baileyae</i>	b sp
Plain Titmouse	<i>Parus inornatus transpositus</i>	b sp

Family Remizidae

Verdin	<i>Auriparus flaviceps acaciaram</i>	b sp
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Family Aegithalidae

Bushtit	<i>Psaltiriparus minimus minimus</i>	b sp
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Family Sittidae

Pygmy Nuthatch	<i>Sitta pygmaea</i> subsp.	
<i>S. p. leuconucha</i>		b sp
<i>S. p. melanotis</i>		sp
Red-breasted Nuthatch	<i>Sitta canadensis</i>	b sp
White-breasted Nuthatch	<i>Sitta carolinensis aculeata</i>	b sp

Family Certhiidae

Brown Creeper	<i>Certhia familiaris zelotes</i>	b sp
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Family Cinclidae

North American Dipper	<i>Cinclus mexicanus [unicolor]</i>	o sp WF (eggs)
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Family Troglodytidae

Cactus Wren	<i>Campylorhynchus brunneicapillus couesi</i>	b sp
Rock Wren	<i>Salpinctes obsoletus obsoletus</i>	b sp
Cañon Wren	<i>Salpinctes mexicanus conspersus</i>	b sp
Marsh Wren	<i>Cistothorus palustris</i> subsp.	
<i>C. p. aestuarinus</i>		b sp
<i>C. p. plesius</i>		sp
<i>C. p. pulverius</i>		sp
Bewick's Wren	<i>Thryomanes bewickii</i> subsp.	
<i>T. b. charienturus</i>		b sp
<i>T. b. drymocus</i>		sp
Winter Wren	<i>Troglodytes troglodytes</i> subsp.?	ph
House Wren	<i>Troglodytes aedon parkmanii</i>	b sp

Family *Mimidae*

Gray Catbird	<i>Dumetella carolinensis</i>	sp
Northern Mockingbird	<i>Mimus polyglottos polyglottos</i>	b sp
Sage Thrasher	<i>Oreoscoptes montanus</i>	sp
Brown Thrasher	<i>Toxostoma rufum</i> [longicauda]	sr
Bendire's Thrasher	<i>Toxostoma bendirei</i>	sp
Leconte's Thrasher	<i>Toxostoma lecontei lecontei</i>	b sp
California Thrasher	<i>Toxostoma redivivum redivivum</i>	b sp
Crissal Thrasher	<i>Toxostoma crissale</i> [coloradense]	b sr

Family *Turdidae*

Western Bluebird	<i>Sialia mexicana occidentalis</i>	b sp
Mountain Bluebird	<i>Sialia currucoides</i>	sp
Townsend's Solitaire	<i>Myadestes townsendi townsendi</i>	sp (Belding 1890)
Varied Thrush	<i>Zoothera naevia</i> subsp.	
	<i>Z. n. naevia</i>	sp
	<i>Z. u. meruloides</i>	sp
Swainson's Thrush	<i>Catharus ustulatus</i> subsp.	sp
	<i>C. u. ustulatus</i>	sp
	<i>C. u. oedicus</i>	b sp WF (eggs)
Hermit Thrush	<i>Catharus guttatus</i> subsp.	
	<i>C. g. guttatus</i>	sp
	<i>C. g. nanus</i>	sp
	<i>C. g. slevini</i>	sp
Wood Thrush	<i>Hylocichla mustelina</i>	sp
American Robin	<i>Turdus migratorius propinquus</i>	b sp

Family *Timaliidae*

Wrentit	<i>Chamaea fasciata henshawi</i>	b sp
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Family *Sylviidae*

Golden-crowned Kinglet	<i>Regulus satrapa amoenus</i>	sp
Ruby-crowned Kinglet	<i>Regulus calendula</i> subsp.	
	<i>R. c. calendula</i>	sp
	<i>R. c. grinnelli</i>	sp
Blue-gray Gnatcatcher	<i>Poliophtila caerulea amoenissima</i>	b sp
Black-tailed Gnatcatcher	<i>Poliophtila melanura lucida</i>	b sp
California Gnatcatcher	<i>Poliophtila (melanura) californica</i>	b sp

Family *Motacillidae*

Water Pipit	<i>Anthus spinoletta pacificus</i>	sp
Red-throated Pipit	<i>Anthus cervinus</i>	sp
Sprague's Pipit	<i>Anthus spragueii</i>	sp

Family *Bombycillidae*

Bohemian Waxwing	<i>Bombycilla garrulus</i> [pallidiceps]	sr
Cedar Waxwing	<i>Bombycilla cedrorum</i>	sp
Phainopepla	<i>Phainopepla nitens lepida</i>	b sp

Family *Fringillidae*

Pine Siskin	<i>Carduelis pinus pinus</i>	sp
American Goldfinch	<i>Carduelis tristis salicamans</i>	b sp
Lesser Goldfinch	<i>Carduelis psaltria hesperophilus</i>	b sp
Lawrence's Goldfinch	<i>Carduelis laurencei</i>	b sp
Purple Finch	<i>Carpodacus purpureus californicus</i>	b sp

Cassin's Finch	<i>Carpodacus cassinii</i>	sp
House Finch	<i>Carpodacus mexicanus frontalis</i>	b sp
Red Crossbill	<i>Loxia curvirostra</i> subspp.	
	<i>L. c. stricklandi</i>	sp
	<i>L. c. bendirei</i>	sp
Evening Grosbeak	<i>Coccothraustes vespertinus</i> subspp.?	sr

Family *Emberizidae*Subfamily *Parulinae*

Black-and-white Warbler	<i>Mniotilta varia</i>	sp
Blue-winged Warbler	<i>Vermivora pinus</i>	sr
Tennessee Warbler	<i>Vermivora peregrina</i>	sp
Orange-crowned Warbler	<i>Vermivora celata</i> subspp.	
	<i>V. c. lutescens</i>	b sp
	<i>V. c. sordida</i>	b sp
	<i>V. c. orestera</i>	sp
	<i>V. c. celata</i>	sp (Willett 1912)
Nashville Warbler	<i>Vermivora ruficapilla ridgwayi</i>	
Virginia's Warbler	<i>Vermivora virginiae</i>	sp
Lucy's Warbler	<i>Vermivora luciae</i>	sp
Parula Warbler	<i>Parula americana</i>	ph
Yellow Warbler	<i>Dendroica petechia</i> subspp.	
	<i>D. p. morcomi</i>	b sp
	<i>D. p. rubiginosa</i>	sp
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	sp
Cerulean Warbler	<i>Dendroica cerulea</i>	ph
Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	sp
Pine Warbler	<i>Dendroica pinus pinus</i>	sp
Grace's Warbler	<i>Dendroica graciae graciae</i>	sp
Yellow-throated Warbler	<i>Dendroica dominica</i> subspp.	
	Yellow-throated Warbler <i>D. d. dominica</i>	ph
	Sycamore Warbler <i>D. d. albilora</i>	sr
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>	b sp
Townsend's Warbler	<i>Dendroica townsendi</i>	sp
Hermit Warbler	<i>Dendroica occidentalis</i>	sp
Black-throated Green Warbler	<i>Dendroica virens virens</i>	sp
Prairie Warbler	<i>Dendroica discolor discolor</i>	sp
Cape May Warbler	<i>Dendroica tigrina</i>	sp
Blackburnian Warbler	<i>Dendroica fusca</i>	sp
Magnolia Warbler	<i>Dendroica magnolia</i>	sp
Yellow-rumped Warbler	<i>Dendroica coronata</i> subspp.	
	Myrtle Warbler <i>D. c. hooveri</i>	sp
	Audubon's Warbler group:	
	<i>D. c. auduboni</i>	sp
	<i>D. c. memorabilis</i>	sp
Palm Warbler	<i>Dendroica palmarum</i> subspp.	
	Western Palm Warbler <i>D. p. palmarum</i>	sp
	Yellow Palm Warbler <i>D. p. hypochrysa</i>	sp
Blackpoll Warbler	<i>Dendroica striata</i>	sp
Bay-breasted Warbler	<i>Dendroica castanea</i>	sp
American Redstart	<i>Setophaga ruticilla</i>	sp
Ovenbird	<i>Seiurus aurocapillus</i> subspp.?	sp
Northern Waterthrush	<i>Seiurus noveboracensis</i>	sp (Keeler 1891, Linton 1907)
Worm-eating Warbler	<i>Helmitheros vermivorus</i>	sp

Prothonotary Warbler	<i>Protonotaria citrea</i>	ph
Common Yellowthroat	<i>Geothlypis trichas</i> subsp.	
	<i>G. t. occidentalis</i>	b sp
	<i>G. t. arizela</i>	sp
	<i>G. t. sinuosa</i>	sp
Kentucky Warbler	<i>Geothlypis formosa</i>	ph
Connecticut Warbler	<i>Geothlypis agilis</i>	sp
Mourning Warbler	<i>Geothlypis (philadelphia) philadelphia</i>	sp
MacGillivray's Warbler	<i>Geothlypis (philadelphia) tolmiei</i>	sp
Hooded Warbler	<i>Wilsonia citrina</i>	ph
Wilson's Warbler	<i>Wilsonia pusilla</i> subsp.	
	<i>W. p. chryseola</i>	o sp
	<i>W. p. pileolata</i>	sp
Canada Warbler	<i>Wilsonia canadensis</i>	ph
Red-faced Warbler	<i>Cardellina rubrifrons</i>	ph
Painted Whitestart	<i>Myioborus pictus pictus</i>	o sp
Yellow-breasted Chat	<i>Icteria virens auricollis</i>	b sp

Subfamily *Thraupinae*

Hepatic Tanager	<i>Piranga flava hepatica</i>	sp
Summer Tanager	<i>Piranga rubra rubra</i>	sp
Scarlet Tanager	<i>Piranga olivacea</i>	ph
Western Tanager	<i>Piranga ludoviciana</i>	b sp

Subfamily *Cardinalinae*

Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	sp
Black-headed Grosbeak	<i>Pheucticus melanocephalus maculatus</i>	b sp
Blue Grosbeak	<i>Passerina caerulea salicaria</i>	b sp
Indigo Bunting	<i>Passerina cyanea</i>	sp
Lazuli Bunting	<i>Passerina amoena</i>	b sp
Painted Bunting	<i>Passerina ciris pallidior</i>	sp
Dickcissel	<i>Spiza americana</i>	sp

Subfamily *Emberizinae*

Green-tailed Towhee	<i>Pipilo chlorurus</i>	o sp
Rufous-sided Towhee	<i>Pipilo erythrophthalmus megalonyx</i>	b sp
Brown Towhee	<i>Pipilo fuscus semicula</i>	b sp
Sage Sparrow	<i>Aimophila belli</i> subsp.	
	Bell's Sparrow <i>A. b. belli</i>	b sp
	Sage Sparrow <i>A. b. nevadensis</i>	sp
Cassin's Sparrow	<i>Aimophila cassinii</i>	ph
Rufous-crowned Sparrow	<i>Aimophila ruficeps lambi</i>	b sp
Tree Sparrow	<i>Spizella arborea (ochracea)</i>	sr
Chipping Sparrow	<i>Spizella passerina</i> subsp.	
	<i>S. p. arizonae</i>	b sp
	<i>S. p. boreophila</i>	sp
Clay-colored Sparrow	<i>Spizella pallida</i>	sp
Brewer's Sparrow	<i>Spizella breweri</i> subsp.	
	<i>S. b. breweri</i>	sp
	<i>S. b. townsendi</i>	sp DEL
Black-chinned Sparrow	<i>Spizella atrogularis cana</i>	b sp
Lark Sparrow	<i>Chondestes grammacus strigatus</i>	b sp

Vesper Sparrow	<i>Pooecetes gramineus</i>	subsp.	
Western Vesper Sparrow	<i>P. g. confinis</i>		sp
Oregon Vesper Sparrow	<i>P. g. affinis</i>		sp
Savannah Sparrow	<i>Ammodramus sandwichensis</i>	subsp.	
Savannah Sparrow group:			
<i>A. s. anthinus</i>			sp
<i>A. s. brooksi</i>			sp
<i>A. s. nevadensis</i>			sp
Belding's Sparrow	<i>A. s. beldingi</i>		b sp
Large-billed Sparrow	<i>A. s. rostratus</i>		sp
Baird's Sparrow	<i>Ammodramus bairdii</i>		ph
Grasshopper Sparrow	<i>Ammodramus savannarum perpallidus</i>		b sp
Sharp-tailed Sparrow	<i>Ammodramus caudacutus nelsoni</i>		sp
Fox Sparrow	<i>Zonotrichia iliaca</i>	subsp.	
Eastern Fox Sparrow group:			
<i>Z. i. zaboria</i>			sp SBCM
<i>Z. i. altiragans</i>			sp
Northwestern Fox Sparrow group:			
<i>Z. i. unalaschcensis</i>			sp
<i>Z. i. annectens</i>			sp (Bishop 1905)
<i>Z. i. townsendi</i>			sp
Southwestern Fox Sparrow group:			
<i>Z. i. schistacea</i>			sp
<i>Z. i. megarhynchus</i>			sp
<i>Z. i. brevicauda</i>			sp
<i>Z. i. stephensi</i>			sr
Song Sparrow	<i>Zonotrichia melodia</i>	subsp.	
San Diego Song Sparrow	<i>Z. m. cooperi</i>		b sp
Merrill's Song sparrow	<i>Z. m. merrilli</i>		sp
Lincoln's Sparrow	<i>Zonotrichia lincolni</i>	subsp.	
<i>Z. l. lincolni</i>			sp
<i>Z. l. gracilis</i>			sp
Swamp Sparrow	<i>Zonotrichia georgiana</i>	subsp.?	
Harris' Sparrow	<i>Zonotrichia querula</i>		sr
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	subsp.	
Gambel's White-crown	<i>Z. l. gambelii</i>		sp
Puget Sound White-crown	<i>Z. l. pugetensis</i>		sp
Mountain White-crown	<i>Z. l. oriantha</i>		sp
White-throated Sparrow	<i>Zonotrichia albicollis</i>		ph
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>		sp
Dark-eyed Junco	<i>Junco hyemalis</i>	subsp.	
Oregon Junco group:			
<i>J. h. thurberi</i>			b sp
<i>J. h. simillimus</i>			sp
<i>J. h. shufeldti</i>			sp
<i>J. h. oregonus</i>			sp SBMNH
Slate-colored Junco group:			
<i>J. h. henshawi</i>			sp
<i>J. h. hyemalis</i>			sp
Pink-sided Junco	<i>J. h. mearnsi</i>		sp
Gray-headed Junco	<i>J. h. caniceps</i>		sp
Lark Bunting	<i>Calamospiza melanocorys</i>		sp
McCown's Longspur	<i>Calcarius mccownii</i>		sp
Lapland Longspur	<i>Calcarius lapponicus alascensis</i>		sp
Chestnut-collared Longspur	<i>Calcarius ornatus</i>		sp

Subfamily Icterinae

Bobolink	<i>Dolichonyx oryzivorus</i>	sp
Western Meadowlark	<i>Sturnella neglecta</i> subsp.	
	<i>S. n. neglecta</i>	b sp
	<i>S. n. confluenta</i>	sp
Red-winged Blackbird	<i>Agelaius phoeniceus</i> subsp.	
	<i>A. p. neutralis</i>	b sp
	<i>A. p. sonorensis</i>	sp
	<i>A. p. californicus</i>	sp (vanRossem 1926)
Tricolored Blackbird	<i>Agelaius tricolor</i>	b sp
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	sp
Rusty Blackbird	<i>Euphagus carolinus carolinus</i>	sp
Brewer's Blackbird	<i>Euphagus cyanocephalus</i> subsp.	
	<i>E. c. minusculus</i>	b sp
	<i>E. c. cyanocephalus</i>	sp
Common Grackle	<i>Quiscalus quiscula versicolor</i>	sp SDSU
Great-tailed Grackle	<i>Quiscalus mexicanus</i> subsp.?	ph
Bronzed Cowbird	<i>Molothrus aeneus [loyei]</i>	o sr
Brown-headed Cowbird	<i>Molothrus ater</i> subsp.	
	<i>M. a. obscurus</i>	b sp
	<i>M. a. artemisiae</i>	sp
	<i>M. a. ater</i>	sp
Scott's Oriole	<i>Icterus parisorum</i>	b sp
Hooded Oriole	<i>Icterus cucullatus nelsoni</i>	b sp
Orchard Oriole	<i>Icterus galbula</i> subsp.	
	Bullock's Oriole group:	
	<i>I. g. parvus</i>	b sp
	<i>I. g. bullockii</i>	sp
Baltimore Oriole	<i>I. g. galbula</i>	sp
Streak-backed Oriole	<i>Icterus pustulatus microstictus</i>	sp

Introduced Species

Ring-necked Pheasant	<i>Phasianus colchicus</i>
Wild Turkey	<i>Melagris gallopavo</i>
Domestic Pigeon	<i>Columba livia</i>
Spotted Dove	<i>Streptopelia chinensis</i>
European Starling	<i>Sturnus vulgaris</i>
House Sparrow	<i>Passer domesticus</i>

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